

PROJECT FINANCE

# NewsWire

April 2013

## Drive to Reduce the Cost of Capital

*by Keith Martin, in Washington*

Renewable energy companies and the Obama administration are looking for ways to reduce the cost of capital for renewable energy projects in the United States.

Attention is focused “yield cos,” “synthetic MLPs,” REITs, true MLPs, foreign asset income trusts and securitizations, among other strategies.

The efforts should be seen in a larger context.

Project developers draw funding from up to six tiers of capital from cheapest to most expensive.

The six tiers are Treasury cash grants, government-enhanced debt, straight debt, tax equity, back-levered debt and true equity. Chief financial officers looking at ways to finance projects try to raise as much capital as possible from the cheapest source before moving up to the next tier.

Each of the new strategies is an effort to raise straight debt more cheaply or to raise true equity at a cost that is closer to the cost of straight debt.

The cheapest source of capital is Treasury cash grants that cover 30% of project cost and are free money. However, the only projects that still qualify for grants are those that were under construction by December 2011.

Next cheapest is government-enhanced debt: loans guaranteed by / continued page 2

### IN THIS ISSUE

- 1 Drive to Reduce the Cost of Capital
- 10 Saudi Arabian Renewable Energy Program: Ready, Set
- 19 Iran Sanctions Enforcement Not Keeping Pace with Rhetoric
- 22 Synthetic Power Contracts
- 26 China Sets New Energy Goals
- 32 The US Distributed Solar Market
- 43 Keys to Getting California Power Contracts Approved
- 48 The State of Project Financing in the Near East
- 55 Tips for Construction Contractors to Avoid Costly Missteps
- 59 Environmental Update

### IN OTHER NEWS

**INDIA** is asserting the right to tax multinational corporations that make capital contributions in exchange for shares in Indian subsidiaries to the extent the shares are worth more when issued than the contributed capital.

Both Vodafone and Shell said in February that they received transfer pricing adjustments by the Indian tax authorities. A Vodafone holding company in Mauritius subscribed for shares in Vodafone India for 8,000 rupees (\$150) a share that the Indian authorities said were worth 50,000 rupees each (\$934). Indian authorities hit the telecom company with a 13 billion rupee (\$243 million) transfer pricing adjustment.

/ continued page 3

## New Strategies

*continued from page 1*

the US Department of Energy or the US Department of Agriculture, cheap financing from export credit agencies eager to support sales of equipment manufactured in their home countries and debt supported by new markets tax credits. The Department of Energy loan guarantee program is winding down. The US Department of Agriculture still has a loan guarantee program that allows debt to be raised at 12.5 basis points above Treasury yields for projects that supply electricity to customers in rural areas. Export credit agency support might include support in theory from the US Export-Import Bank, which has authority to counter efforts by foreign ECAs to promote sales of foreign equipment over US-made equipment, although the agency has declined to use the authority to date.

## Developers are looking at “yield cos,” “synthetic MLPs,” REITs, foreign asset income trusts and securitizations as ways to reduce the cost of capital.

Tax equity remains a core financing tool for renewable energy companies that are large enough to be in a position to raise it. Federal tax benefits on wind, solar and geothermal projects amount to 56¢ per dollar of capital cost. A tax equity transaction can raise anywhere from 9% to 85% or more of project value, depending on the form of tax equity transaction and the type of project. Tax equity looks at first glance like it costs more than straight debt, but the developer is using a currency — tax benefits that he or she is not in a position to use efficiently — to repay part of the financing, so it requires a more complicated analysis.

### “Yield Cos”

“Yield cos” are corporations listed on a US or Canadian stock exchange that hold operating assets. The idea is to move operating assets under a publicly-traded vehicle, allowing equity to be raised at a higher multiple to earnings. The assets have been

de-risked and throw off predictable cash flow. Investors pay a premium as well for the ability to trade their ownership positions in a liquid market. If, in addition, the publicly-traded entity is not subject to income taxes on its earnings, then the investors will pay a higher multiple still.

The developer keeps its pipeline of projects under development in a separate entity. The yield co has an option to purchase each new project as it enters or ends construction.

Most renewable energy projects do not start generating taxable income until three or four years after they have been in operation. The projects are depreciated largely over five years on an accelerated basis. The depreciation exceeds revenue from electricity sales for the first several years. The excess depreciation can be carried forward for up to 20 years and, if used solely to shelter earnings from the project, can usually shelter earnings for up to nine years.

Thus, a yield co should be able to go for an extended period without any income taxes at the entity level.

In this sense, it is like a “synthetic MLP.” An MLP, or master limited partnership, is a large partnership whose units are traded on a stock exchange. Because it is a partnership, there is no tax at the partnership level; the earnings are taxed to

the partners or investors directly.

There will be no taxes on earnings initially at the investor level, either, if the yield co can spread out its depreciation to more closely match the pattern of electricity revenues. Cash distributions by a corporation are considered taxable dividends to shareholders to the extent the corporation has either undistributed accumulated “earnings and profits” or current-year earnings and profits. If it has neither, then the cash distributions are considered nontaxable returns of capital to shareholders until the shareholders get their capital back. (After that, the distributions are reported as capital gains.) A corporation with a large net operating loss carryforward due to depreciation may not have to pay any corporate income taxes, but would still be treated as paying dividends if it has current-year earnings. Therefore, the key is to avoid current-year earnings and profits over roughly the same nine-year period that the corporation is not expected to have to pay any income taxes. It helps that

even though wind, solar and geothermal projects are depreciated for tax purposes on an accelerated basis over five years, depreciation for calculating earnings and profits is taken over 12 years on a straight-line basis.

First Wind did a forerunner of a yield co, but without a publicly-traded entity, in 2012. It sold a 49% interest in a portfolio of operating wind farms in New England and New York to a US subsidiary of Emera, a Canadian utility holding company. The joint venture may acquire other projects that are currently under development as the projects reach construction.

## REITs

REITs or real estate investment trusts are another form of publicly-traded entity that could be used to raise capital at lower cost, but they are difficult to use and may create other complications.

REITs are corporations or trusts that do not have to pay income taxes on their earnings to the extent the earnings are distributed each year to shareholders.

Congress created REITs in 1960 as a way for small investors to invest in large-scale real estate projects. Small investors pool their investments in the REIT and are treated essentially as if they had invested in the real estate projects directly without a corporate-level tax being taken out along the way.

There are two kinds of REITs: equity REITs and mortgage REITs. Equity REITs own assets directly. Mortgage REITs make loans secured by mortgages over real property.

Either type of REIT must jump through three hoops to maintain qualification as a REIT. It must hold at least 75% “real estate assets” at the end of each quarter. Examples of such assets are land, site leases, buildings and mortgages secured by real property. At least 75% of the REIT’s gross income each year must come from such things as rents from real property and interest on mortgages secured by real property, and at least 95% must be rents from real property, interest, dividends and certain other forms of passive income.

A REIT cannot own an operating business. If it sells inventory, then it is subject to a 100% tax on the profits.

Thus, an equity REIT would have to own the portions of a wind, solar or other project that are considered “real property” and lease them to an operating company. The REIT’s income would be rent from real property. However, the REIT could not own the land underneath a wind farm, for example, and charge a rent for the use of the land that reflects the improvements, meaning the fact that the land has a

/ continued page 4

Shell was hit with a transfer pricing adjustment of 152.2 billion rupees (\$2.86 billion) after an equity subscription by Shell Gas BV in Holland in shares of Shell India.

*Both companies said they will fight the adjustments. India views the share subscriptions as outbound transfers of unreported value. The companies view themselves as simply having made capital contributions to their subsidiaries.*

**PARTNERSHIPS** may be subject to new tax rules in the future.

The staff of the House tax-writing committee released a discussion draft in March of a complete rewrite of the US tax rules for partnerships.

The draft is the third in a series of discussion drafts that the staff has been releasing for comment as it works out possible elements of a major corporate tax overhaul. The other two discussion drafts released earlier dealt with tax treatment of US multinational corporations on income earned outside the United States and the tax treatment of derivatives, like futures and forward contracts, swaps and options.

The rewrite of the partnership tax rules would apply starting next year, assuming Congress finds time to take up major tax reform in 2013. However, most lobbyists think any tax overhaul is unlikely to be enacted before next year at the earliest.

The new rules could affect some existing tax equity transactions structured as partnerships.

There are no transition rules in the draft. These are usually not added until a bill starts moving through the tax-writing committees and to the House and Senate floors.

The discussion draft would eliminate any distinction between partnerships and S corporations (a form of passthrough entity used by small businesses). Instead, an entity would either be a “passthrough” or a “corporation” for tax purposes. Taxpayers could elect to treat corporations as passthroughs, but this election would not be available for any publicly-traded corporation, bank or insurance company. “Publicly-traded” is broadly defined.

/ continued page 5

## New Strategies

*continued from page 3*

wind farm on it, because part of the rent would have to be allocated to the equipment. The towers, distribution lines and other inert parts of the project may be real property, but machinery is not.

A least one REIT has asked the Internal Revenue Service for a private letter ruling that solar rooftop systems are real property. No ruling has been issued, and indications from the IRS to date have been that the agency is not prepared to treat solar panels as real property. REIT advocates argue that the panels are closer to transmission lines that the agency has already ruled privately are real property than to machinery, because the panels are an inert asset through which energy passes.

The tax committee of the Solar Energy Industries Association suggested to REIT advocates that they should be careful so as not to do harm to other tax positions the industry has taken.

There are four issues.

First, renewable energy companies have taken the position with the US Treasury the last four years that their projects are largely equipment in order to qualify for Treasury cash grants on the projects. REITs require pivoting to a position that the projects are partly or largely real property. Grants are only paid on equipment. There are differences in what is considered real property for cash grant and investment tax credit purposes and

tax equity. It is less likely to affect utility-scale projects. There have been at least three dozen large tax equity transactions done around portfolios of solar rooftop installations. These transactions rely on the ability of a third party to own the systems for tax purposes. Given the right facts, third-party tax ownership can be established, but it is harder to claim tax ownership of an asset that is bolted permanently to someone else's roof, as it can be a little like claiming ownership of a chimney on someone else's house.

Third, wind, solar and geothermal property is depreciated over five years. This depreciation is worth almost as much in tax savings as the Treasury cash grant or investment tax credit: the tax savings have a present value of roughly 26% of project cost at a 35% income tax rate using a 10% discount rate. Five-year depreciation is only available for "equipment" as opposed to "non-residential real property."

Finally, the US renewable energy sector has attracted a large amount of foreign investment, including by prominent European utilities. The US does not tax foreigners on their gains from US investments, unless the investments are in US real property. Any tax in that case is levied under a statute called the Foreign Investment in Real Property Tax Act or FIRPTA. Most renewable energy companies take the position that their asset value is largely in equipment rather than real property. FIRPTA and the REIT statute use the same definition of "real property." Foreign shareholders in a publicly-traded REIT are not subject to

FIRPTA taxes as long as they have not held more than 5% of the REIT, but any decision that renewable energy projects are largely real property would be an unwelcome development for the offshore investment funds and European utilities invested in the sector.

Citigroup, GE Energy Financial Services and other financial institutions have been circling

the energy efficiency sector trying to figure out how to finance retrofits to existing buildings so the buildings use energy more efficiently. Hannon Armstrong has solved the puzzle. The company has made a business of securitizing government payment obligations under energy savings performance contracts. These are contracts that private contractors like Honeywell and Johnson Controls sign with US military bases and government

## Any use of equity REITs in the solar market will have to be done with care.

what is real property for REIT purposes. An asset can be real property for REIT purposes and still be equipment for the cash grant and investment credit if it is "inherently permanent," meaning so fixed to land or a building that it is unlikely ever to be removed.

Second, treating solar rooftop panels as inherently permanent could make it harder for solar rooftop companies to raise

## IN OTHER NEWS

agencies to install solar panels, more efficient lighting, better windows and similar improvements in exchange for periodic payments that are a share of the energy savings. Hannon Armstrong filed a draft S-11 registration statement with the US Securities and Exchange Commission in February indicating that it plans to convert into a mortgage REIT. The REIT will issue shares on the New York Stock Exchange. The goal is to raise at least \$100 million.

The IRS issued Hannon Armstrong a private letter ruling last fall confirming that the security it plans to take back for its loans qualifies as a mortgage on real property. Redacted copies of private letter rulings are normally made public three months after the ruling is received by the taxpayer, but Hannon Armstrong appears to have asked for an additional delay to allow time to be the first mover on its strategy. IRS rules allow another three-month delay for this purpose and, under certain circumstances, may allow the period to be extended by another six months.

Meanwhile, the REIT community has been watching the expansion of what can be put into a REIT with some trepidation for fear that the expansion will eventually lead to a backlash in Congress. In the last year, the IRS has ruled that signs permanently attached to buildings, offshore oil and gas platforms, boat slips and data center buildings are real property. In November 2012, casino owner Penn National Gaming, Inc. announced plans to do a tax-free spinoff of its casino facilities into a REIT, and the REIT would lease them back to the operating company. Penn National said that it has a private letter ruling from the IRS approving certain aspects of the transaction and the qualification of the new company as a REIT.

### MLPs

A push continues in Congress to allow renewable energy companies to reorganize themselves as master limited partnerships.

MLPs require a statutory change by Congress. An MLP is a partnership that raises capital by listing units on a stock exchange. There is no income tax at the partnership level. The investors are taxed directly on their shares of earnings. The liquidity, or the ability to exit the investment in a public market, and the fact that earnings are only taxed once mean that equity can be raised at a higher multiple to earnings. The MLP units also provide a currency that can be used to make acquisitions.

Minerals and natural resources companies can already operate as MLPs. Renewable energy companies generally cannot, with the exception that the geothermal / continued page 6

Passthroughs would have to withhold taxes on the income allocated to partners. The rate has been left blank.

The partners would have refundable income tax credits for the withheld taxes.

Partnerships would not be able to make special allocations of depreciation or other elements that go into the calculation of ordinary income. However, tax credits could be allocated in a different ratio than other partnership items. Allocations to each partner would have to be consistent with the partner's "economic interest." The term is not defined.

The draft is unclear about whether master limited partnerships would be able to continue operating as passthroughs. However, the staff director of the House tax subcommittee said in an email that the issue was simply beyond the scope of the draft. "Changes to the tax rules governing those specific regimes (in the context of tax reform) are a discussion for another day."

*The draft is one of two options the committee is considering for partnerships. The other option is a list of incremental changes rather than a wholesale rewrite.*

**THE SECTION 1603 PROGRAM** remains an area with lots of activity.

A solar company that sued the Treasury for failure to pay grants on its solar systems mounted on the backs of flatbed trucks agreed in March to drop the lawsuit "with prejudice," meaning the suit cannot be reinstituted. The company had claimed tax bases in its systems for calculating grants as high as \$45 a watt. The US government had filed a counterclaim accusing the company of filing false claims. Five other suits are still pending against Treasury.

The US attorney in New York sued a company, The Excelsior Packaging Group, in early April to recover a \$129,111 grant that the Treasury paid the company in January 2010. The company failed to file annual reports confirming that it still owned and is using its renewable energy project. The company failed to respond / continued page 7

## New Strategies

*continued from page 5*

field portion of a geothermal project can be put in an MLP. Senator Chris Coons (D-Delaware) is proving an effective advocate for allowing renewable energy companies to operate as MLPs, but the proposal still faces long odds. At the end of the day, the issue is how many additional industries Congress will allow to operate without having to pay corporate income taxes. Standalone tax bills do not pass Congress. The proposal is unlikely to be taken up until it can be considered as part of a larger debate about corporate tax reform. Most lobbyists do not expect Congressional action on corporate tax reform before 2014 at the earliest, although the timetable could accelerate if President Obama and Congressional Republicans can reach a grand bargain on the federal budget deficits this summer. Congress will have to increase the federal debt ceiling by late July or August or the government will run out of money to fund operations.

There is a split within the renewable energy community about whether it is enough to amend the US tax code to allow renewable energy companies to operate as MLPs or whether one would have to go farther and also relax at least two other tax rules that make it difficult for individual investors to share in tax benefits from renewable energy projects.

One advantage of operating as a partnership is tax benefits pass through to the partners. Renewable energy projects generally throw off more tax benefits than income for the first three or four years of operation. When wind companies first started advocating for MLPs in 2005, the idea was to open the tax equity market to a larger pool of potential investors in the hope that increasing the supply of tax equity would bring down the cost. However, “passive loss” and “at-risk” rules limit the ability of individuals, S corporations and closely-held C corporations (corporations in which five or fewer individuals own more than half the stock) to use the tax benefits from any wind or other renewable energy project. Such investors would be limited to using them solely as shelter for income from the project and other passive investments and then only to the extent of the equity the investor has at risk in the particular project. The passive loss and at-risk rules make limited exceptions for investments in oil and gas and low-income housing projects, but not renewable energy.

The industry appears to be moving gradually to the view that it is enough merely to have permission to operate as an

MLP. In that case, MLPs would be used to raise money from large corporations.

Operating as a partnership creates challenges. Pension trusts, university endowments and other tax-exempt investors (and private equity funds with any such investors) would have to invest through “blocker” corporations to avoid partial loss of tax benefits on the projects. A project owned partly by an entity that does not pay taxes is not entitled to full tax benefits. A 50% or more change in ownership within a 12-month period could cause the partnership to terminate for tax purposes, leading to a time-value loss in depreciation. Solar and other projects on which investment tax credits are claimed would face an additional challenge. Any partner who is allocated an investment tax credit would suffer full or partial recapture of the credit if he sells his interest within five years.

The existing MLP market has been made up principally of yield investors who are looking for predictable cash flow.

In the meantime, there is a “self-help” MLP structure that can be used without waiting for Congress to amend the statute. The MLP forms a corporate subsidiary to hold assets that do not throw off the right type of income to be included in an MLP. At least 90% of the gross income of the MLP each year must be dividends, interest, rent from real estate, certain other forms of passive income or income and gains from “the exploration, development, mining or production, processing, refining, transportation . . . or the marketing” of any minerals and natural resources. Assets that do not throw off this kind of income are put in the corporate subsidiary. The MLP raises capital in the public markets and injects part of it into the corporate subsidiary partly as debt and partly as equity. Earnings move up to the MLP from the corporate subsidiary partly as interest. The interest can be deducted by the corporate subsidiary. The presence of the corporate subsidiary in the ownership chain has the effect of converting bad income (revenue from electricity sales) into good income (interest and dividends) when received by the MLP. Both Fortress and Blackstone used this structure when they converted to MLPs in 2007.

### Canadian Income Trusts

Some US energy companies are tapping foreign asset income trusts, also known as cross-border income trusts, in Canada to raise cheaper capital.

An income trust is a trust formed in Canada that raises money in the capital markets and pools it for investment. Trust units are traded on a stock exchange. The trust is not subject to



## IN OTHER NEWS

income taxes in Canada. Rather, its earnings are taxed to the investors directly. A large percentage of the trust units may be held through tax-deferred retirement funds with the result that the earnings are often not taxed immediately at the investor level either.

Income trusts saw a phenomenal growth in Canada at the start of the last decade through 2006 when the Canadian government took steps to shut them down. There were 256 income funds in Canada by 2006 with a combined market capitalization of C\$256 billion. Canada faced the prospect of mass de-corporatization as Canadian companies rushed to convert into income trusts. Because of the tax advantage, the typical trust could return at least 27% more cash to Canadian investors than would a similar investment directly in corporate shares.

Private equity firms used this math to turn large profits. For example, Kohlberg Kravis Roberts & Co. and the Ontario Teachers' Pension Plan Board together acquired 90% of the Yellow Pages business in Canada from Bell Canada in November 2002 for C\$900 million and then resold a 25% interest in the business in the summer 2003 through an income trust for C\$935 million. American Industrial Partners achieved similar alchemy by acquiring Great Lakes Carbon — a US-based producer of calcined petroleum coke for making aluminum — in 1998 and then selling down the investment to a Canadian trust in 2003.

The Canadian government introduced so-called SIFT rules in 2007 that required income trusts essentially to start paying income tax on pre-dividend earnings, just like a corporation.

The trust structure was revived starting in late 2010, but this time focusing solely on investments outside Canada. Such investments are not subject to the SIFT rules as long as the trust does not own any assets that are used in carrying on a business in Canada.

Five foreign asset income trusts are now listed on the Toronto Stock Exchange. Four are focused on energy investments in the United States. The Eagle Energy Trust raised C\$169 million in November 2010 to acquire a 73% working interest in the Salt Flat light oil field in south central Texas. Parallel Energy Trust raised C\$393 million in April 2011 to acquire a 59% working interest in the West Panhandle natural gas field in northern Texas. Argent Energy Trust raised C\$212 million in August 2012 and used the funds to acquire oil and gas wells in Texas and Oklahoma.

The Crius Energy Trust went public in November 2012 and raised C\$100 million that it used largely / continued page 8

to multiple demand letters and efforts by a private bill collection agency.

The Treasury is taking aim at the tax bases claimed in sale-leasebacks with low rent coverage ratios. It believes that leases that set rent at only 1.0 times the revenue the lessee earns are being used by lessors to justify inflated purchase prices and, therefore, higher cash grants.

It has set new caps of \$4 to \$6 a watt on basis in emails to solar rooftop companies. The new caps apply to solar equipment put in service on or after October 1. The caps vary by company because the Treasury is using the income method and customer terms vary, but it raises questions about fairness since the effect is to pay grants of varying amounts to companies that may be direct competitors and are using identical equipment.

The Treasury says that rights to cash grants do not carry over where a developer contributes stockpiled 2011 equipment to a project company and then sells the project company during construction, unless the project is well advanced by the time of sale. The project company cannot be mere wrapping paper for the stockpiled 2011 equipment.

Grants are subject to an 8.7% haircut for the remainder of this fiscal year due to sequestration.

The fiscal year ends on September 30.

A new haircut percentage will have to be calculated for grants paid after that, assuming sequestration remains in effect.

Any project that received an award letter from Treasury before March 1 will not be affected. Sequestration does not apply to any grant that was an "obligated balance" before sequestration went into effect on March 1. A grant is an obligated balance when Treasury formally notifies a project that a grant in \$X amount has been approved for payment.

The 8.7% haircut will apply to grants for which award letters are received during the period March 1 through September 30 this year.

It is unclear whether a haircut will apply to additional payments on / continued page 9

## New Strategies

*continued from page 7*

to buy two subsidiaries of Crius Energy, LLC in Connecticut, as well as a 27% interest in the parent company. Crius Energy serves more than 400,000 residential and commercial customers in 12 eastern US states and the District of Columbia. It markets electricity and natural gas directly to customers.

A fifth foreign asset income trust, Dundee International REIT, was launched in 2011 and makes real estate investments in Germany.

The combined market capitalization of the five such trusts is C\$2.03 billion.

The offerings have had a mixed reception from investors. Two foreign asset income trusts that attempted to go public in 2011 had to cancel the offerings. One, Argent, succeeded a year later. Another, the North American Oil Trust, was rumored to have raised only a tenth of the C\$375 million it was seeking before cancelling the offering. Newspaper reports that as many as another six trusts would list by the end of 2012 proved unfounded. Three of the five existing trusts are trading at reduced unit prices to the initial offering. In early April, Eagle was trading at 68.9% of the original unit price, Parallel at only 42.7% and Crius at 68.7%. Argent was at 104.2% and Dundee at 106.9%. The trusts pay high cash-on-cash payouts. Current dividend yields are 15.24% for Eagle, 14.02% for Parallel, 10.08% for Argent, 14.49% for Crius and 7.52% for Dundee.

Promoters of the structure took comfort from the March 2013 federal budget that another change in tax policy affecting the trusts is unlikely. The budget included a long list of anti-tax-avoidance measures that appeared to be a “thorough house cleaning,” according to one Canadian law firm, without any proposals to curtail use of cross-border trusts.

There are two main structures.

In one, a “mutual fund trust” is formed in Canada. It raises money through an initial public offering and injects the money partly as debt and partly as equity into a subsidiary commercial trust, also in Canada. The subsidiary trust then owns a US limited partnership (for investments in Texas to avoid the state margin tax) or another US passthrough entity that owns the projects or other assets. This trust-on-trust-on-partnership structure was used by Parallel Energy Trust.

In the other structure, a mutual fund trust is formed in Canada. It raises money through an initial public offering and injects the money as equity into a subsidiary corporation in

Canada. The Canadian subsidiary then injects the money partly as debt and partly as equity into a US subsidiary corporation that owns the projects or other assets. The Canadian subsidiary then distributes the note from the US subsidiary to the Canadian parent trust. This trust-on-corporation-on-corporation structure was used by Argent Energy Trust.

There is no tax in Canada at the level of either Canadian entity. The income flows through to the unitholders.

In the US, the Canadian subsidiary is treated as a corporation for US tax purposes under both structures. A US corporate income tax must be paid in theory on the lowest entity treated as a corporation in each structure — the Canadian subsidiary trust in the first structure and the US subsidiary corporation in the second structure — but taxable income at the level of these entities is largely offset by the interest payments on the intercompany debt and by deductions for depreciation, depletion and intangible drilling costs. The result is that a small regular US corporate income tax or alternative minimum tax is paid at the entity level. The US normally also collects a withholding tax at the border on payments by a US taxpayer to someone outside the country, but the withholding tax in this case is avoided under either a “portfolio interest exemption” or the US-Canadian income tax treaty.

The United States has earnings-stripping rules that limit the extent to which a foreign parent company can capitalize a subsidiary that is a US taxpayer with debt and then “strip” the earnings from the subsidiary by withdrawing them as deductible interest payments to the parent. When the rules apply, interest deductions are disallowed. At least two things must be true for the rules to apply. The subsidiary paying the interest must have a high debt-to-equity ratio — it does — and the interest must be paid to a related party. It is not in this case as long as the parent mutual fund trust is ignored for US tax purposes so that the interest is considered paid to each unitholder individually.

## Securitizations

Several solar rooftop companies are exploring the concept of pooling lots of customer payment obligations in a trust or limited liability company and then “securitizing” or converting the future payment streams into current cash by selling securities in the trust in the institutional debt market.

Such transactions usually require the customer paper be rated by two rating agencies. A developer using such asset-backed securities can usually borrow more cheaply than straight bank debt.



## IN OTHER NEWS

The Obama administration is eager to help facilitate such transactions. There are three main impediments: lack of industry form agreements with customers, lack of data on customer default rates and lack of accepted back-up servicing companies in whom the asset-backed securities market has confidence can provide the customer services required to earn the revenue over time. The home mortgage, student loan and other markets, where securitizations are common, use pre-printed agreements with customers.

Despite the obstacles, many people expect the first deal later this year.

The National Renewable Energy Laboratory, which is an arm of the US Department of Energy, is spearheading an effort to address the obstacles in the solar residential and commercial markets. A group of solar companies, rating agencies, law firms and other advisers has been meeting in person and on conference calls to work through the various issues while NREL also polls solar companies for customer default data. The group is about to move to a mock transaction that can then be rated by the rating agencies as a trial run.

A separate effort through the Rocky Mountain Institute is focused on the commercial and industrial rooftop market.

One of the challenges will be how to marry the structures with tax equity. The trust or LLC issuing securitized debt would normally be expected to hold the customer agreements that generate the revenue, but the tax equity vehicle needs to rely on the same revenue. The challenge is how to marry two financings around the same revenue-generating assets. One approach may be to have the securitization trust act essentially as a conduit to raise money that it relends into the tax equity vehicle. The marriage may not work with some types of tax equity structures. For example, in an inverted lease where the developer assigns the customer agreements to a tax equity investor and leases it the solar equipment, the customer revenue is received by the developer in the form of rent after passing through the lessee. Any debt would be expected to come in at the lessor level. The customer agreements may be too far removed and the revenue may be considered too much at risk. The developer has ongoing obligations to the lessee tied to representations and covenants that, if breached, would require an indemnity be paid to the lessee that would offset rent. ☺

grants that were already paid. The Treasury sometimes makes additional payments where developers complain that they were shortchanged.

The Office of Management and Budget said in a report to Congress shortly before sequestration took effect that it is projecting \$3.671 billion in grants to be paid in fiscal 2013 from which sequestration requires \$187 million in savings. According to the OMB report, the haircut percentage in 2013 would have been only 5.1% if 2013 had been a full year, but a larger haircut is required from remaining 2013 grants since only seven months remain in the fiscal year to achieve the full savings.

Sequestration originally required \$109 billion in spending reductions in each of nine years starting in 2013. It was originally scheduled to take effect on January 2, 2013. However, as part of the fiscal cliff deal on January 1, Congress agreed to \$24 billion in specific spending cuts and tax increases to pay for a two-month delay to March 1.

That left \$85 billion in across-the-board spending cuts for the remainder of 2013.

The required spending cuts will be \$109 billion for fiscal 2014, but spread over 12 months.

Congress could still decide to suspend sequestration at some point later this year, but the earliest that realistically could occur is late July or August when the government is expected to have reached the limits of its borrowing authority. Congress will have to act by then to increase the federal debt limit. Congress removed some of the political pressure to lift sequestration by giving agencies like the US Department of Agriculture and the Department of Defense more flexibility on how to apply spending cuts within their departments in late March. There had been fears that sequestration would force layoffs of federal meat inspectors.

*Some companies facing haircuts in grants have thought about stretching out the application process to push back approval to late summer, by* / continued page 11

# Saudi Arabian Renewable Energy Program: Ready, Set

*Saudi Arabia is expected to issue procurements for 41,000 megawatts of solar power projects worth more than \$60 billion, plus another 13,000 megawatts of wind, geothermal and waste-to-energy plants, by 2032. The first step in the process was the release of a white paper in late February by the King Abdullah City for Atomic and Renewable Energy or K.A.CARE, Saudi Arabia's renewable energy procurement agency.*

*A group of solar industry participants talked in late March about the white paper and what to expect in the introductory procurement round.*

*The panelists are Roberto de Diego Arozamena, CEO of ALJ Energy, an Abdul Latif Jameel Company, Yara Anabtawi, director of business development for renewables at ACWA Power, Erik Voldner, executive director for operations at Enviromena Power Systems LLC, Matt Campbell, senior director for power plant business development at SunPower Corporation, and Dr. Moritz Borgmann, consultant at Apricum - The Cleantech Advisory. The moderators are Clint Steyn with Chadbourne in Dubai and Agnieszka Klich with Chadbourne in London. Richard Keenan in Dubai also participated in the discussion.*

MR. STEYN: The long-awaited white paper has caused a lot of excitement in the market. Yara Anabtawi, what are your general impressions?

MS. ANABTAWI: The white paper shows that K.A.CARE is adopting a holistic approach and attempting to reach multiple

objectives, including socioeconomic issues. It is a general document. It outlines very broad parameters and solicits feedback from stakeholders. We are eagerly awaiting the draft request for proposals and the draft power purchase agreement, which I expect will answer questions in a lot more detail. In the meantime, the white paper talks about the structure, timeline, technology targets, qualification criteria and evaluation. It is a serious step that gives comfort that the program will hopefully launch very soon.

MR. CAMPBELL: The potential for solar in Saudi Arabia has been anticipated since our founding more than 25 years ago, so it is really terrific to see this happening. The overall feedback is it is a well thought out program, and it gives our industry what we need.

With many of the markets in the world facing uncertain times, and a consolidation happening on the supply side, one thing we need is a stable long-term market that will allow us to make investments in research and development and manufacturing to drive costs down. This program, with its consistent annual volume of large-scale solar power projects, could not come at a better time.

There are still a lot of details missing. A lot will be answered in the forthcoming documents. However, this is a great start to the program.

MR. VOLDNER: The white paper is a great first step to allow the industry to comment on the shape of the program, give feedback on the qualification criteria, the financial criteria and how the bids will be judged.

MR. DE DIEGO: It is a document that you have to read very carefully to understand how the government is thinking of moving forward with its program. It reflects the strategic priorities of the country. K.A.CARE met the initial expectation that it

would issue the white paper in Q1 of this year. Is a very complex process for K.A.CARE to initiate. Complexities are being addressed very carefully to reduce the chances of making mistakes. I am very pleased about how the government is approaching this program.

DR. BORGMANN: We are very pleased with this document. It is a very comprehensive, professionally-prepared document. It

**Saudi Arabia is moving closer to launching procurements for a large number of renewable energy projects.**

ticks all the major boxes, and particularly from a technical process point of view, it makes a lot of sense even though some details still need to be worked out.

K.A.CARE has spent a lot of time trying to avoid repeating the mistakes made in other parts of the world. For example, in India, there has been a race to the bottom, where power purchase agreements were closed at very low prices. Not surprisingly, plant quality issues emerged. Japan introduced an indiscriminate, probably too high, feed-in tariff. If Saudi Arabia follows through with its program, we think it is likely to be close to what can currently be considered best practice.

### Initial Targets

MR. STEYN: Erik Voldner, it seems extremely ambitious to reach 54,000 megawatts of renewable energy capacity by 2032. What are your thoughts on the scale, the targets and the allocation of technologies in the various rounds?

MR. VOLDNER: A target of 54,000 megawatts in the next 20 years seems very ambitious for a region that has fewer than 50,000 megawatts installed to date. But when we start looking at the breakdown of technologies, for PV, CSP, onshore wind, geothermal and waste, you realize that it is not unrealistic.

On PV, after the introductory round, we would be looking at approximately 800 to 1,000 megawatts per year consistently. This is not only good for the industry, as it provides a consistent pipeline, but it is also a very achievable target.

On CSP and wind, we have about the same scale up; from zero to a steady stream through the introductory, first and second rounds. Then, the idea is to maintain a consistent installed capacity every year.

So, although the program seems ambitious — given the short time frame and the large scale — when we break it down by technology on a 20-year horizon, it appears achievable.

MR. STEYN: Please give us an overview of the targets for the introductory, first and second rounds and the rough allocation of technologies that is expected in each of those rounds.

MR. VOLDNER: The program kicks off with three procurement rounds: the introductory, first and second rounds. The introductory round is expected to be about 500 megawatts to 800 megawatts, consisting of about five to eight projects. The technology mix and the size of each project are not described in the white paper. I assume this type of information will be included in the request for proposals and power purchase agreement. We expect these documents to be issued in the coming days or weeks. The first round is / continued page 12

*when sequestration may have been lifted. Applications must be filed within 90 days after a project is put in service. There is no formal way to stretch out processing, but the reviewers sometimes send questions and answering them can take time.*

**NO COSTS WERE “INCURRED”** under a construction contract for a large power plant until the plant reached substantial completion, the Internal Revenue Service ruled.

The ruling has implications for renewable energy companies rushing to start construction of new US projects this year to qualify for tax credits.

A utility signed a lump-sum turnkey construction contract with a contractor before 2008 to build a power plant that burns petroleum coke in a circulating fluidized-bed boiler to generate electricity. The utility qualified potentially for a 50% “depreciation bonus” on the project, or the ability to deduct 50% of the cost immediately, but only if it could show that the project was not under construction before 2008.

It was a bad fact that the utility had a binding construction contract in place before 2008. The IRS said the fact that the contract price increased as a consequence of a settlement agreement settling conflicting claims that the contractor and utility had against each other, and that other changes were made to reduce the guaranteed output and make small changes in equipment design due to changes in the expected characteristics of the petroleum coke, did not prevent the contract from being considered binding back to the date it was originally signed.

It was also a bad fact that physical work on the project started before 2008.

However, the depreciation bonus rules let one ignore these factors if no more than 10% of the total project cost was “incurred” before 2008. The utility said that under its method of accounting, it does not treat costs as incurred until a project is accepted. The construction contractor / continued page 13

## Saudi Arabia

*continued from page 11*

expected to be 2,000 to 3,000 megawatts and the second round between 3,000 and 4,000 megawatts.

Any estimates on technology mix would be a guess at this point.

MR. STEYN: I want to focus on the allocation between PV and CSP. In rounds one and two, the allocation between each technology is more or less equal. Matt Campbell, how do you think this will play out in the long run?

MR. CAMPBELL: We've seen, in markets such as California, a shift away from CSP — which was traditionally considered the best technology for utility-scale solar — to PV. This has been driven by economics. PV is also easier and faster to build, easier to permit and easier to finance. So it is not clear that the initial 50-50 ratio will hold through the life of the program.

The motivation behind K.A.CARE's CSP drive is to provide thermal storage to help fill the afternoon shoulder. That is one way to do it; there are other ways. California developed a scheme called "flexi ramp" that creates a market mechanism for people to bid ramping services in the afternoon. Other grids, such as the ones in Spain and Germany, have been able to balance a system without the use of large-scale storage.

## Drafts of the request for proposals and power purchase agreement are expected within weeks.

### Bid Limits and Timing

MR. STEYN: Another interesting issue is the bid limits per round. The white paper states that a bidder may only bid for 30% of capacity in any particular technology tranche in each round. Yara Anabtawi, what are your thoughts on this limitation?

MS. ANABTAWI: K.A.CARE wants to involve as many companies as possible, especially in the early stages of the procurement program.

MR. STEYN: Roberto de Diego, do you think this limitation could be an issue?

MR. DE DIEGO: There might be an issue in the introductory round because, based on prior communications from K.A.CARE — and this is not confirmed — there will be three PV projects, three CSP projects and one wind project. If you are only able to bid for one project, K.A.CARE risks, in a worst-case scenario, finding itself in a situation where all bid for one site to the exclusion of the other two sites. I would favor a much higher threshold in terms of proposals, even though the 30% limit is reasonable.

MR. STEYN: We are on the topic of giving feedback on the program, the white paper, the project documents and the envisaged consultation process. Roberto de Diego, could you tell us about what has happened so far? How has the registration process worked for potential bidders? When do you expect the next steps, particularly the release of the PPA and the RFP?

MR. DE DIEGO: The timing stated in the white paper may be overly aggressive. A bidder registration scheme was introduced last year. The white paper introduced an additional bidder registration scheme that supersedes the initial scheme. Comments on the white paper are due on April 5. The next step will be for K.A.CARE to issue the draft request for proposals and draft power purchase agreement, and that will lead to another com-

ments round. In an ideal situation, the final request for proposals will be issued to qualified bidders towards the end of June 2013. However, given K.A.CARE's resources and the amount of work it will need to do, I suspect the whole process will be delayed.

MR. STEYN: Moritz Borgmann, timing is a major consideration for industry participants. Assuming the introductory round occurs on

schedule, how do you see the following rounds progressing, and what is your best guess on general timing for each of the rounds?

DR. BORGMANN: We have no reason to believe that K.A.CARE will deviate from what has been announced. K.A.CARE anticipates 12 to 18 months between the rounds. Each round should take between eight to 10 months. There is

one element that could be improved. K.A.CARE is setting the same timing for different technologies. However, there are vast differences between the speed at which you can develop a CSP and a PV plant, for example. Although K.A.CARE has not said anything about this to date, it will have to consider creating technology-specific procurement tracks.

MR. STEYN: Yara Anabtawi, what do you expect in the introductory round? There have been mixed views in the market on whether the projects will be procured on an EPC or IPP basis.

MS. ANABTAWI: The white paper does not explicitly state whether the introductory round projects will be procured on an IPP or EPC basis, but some of the terminology used points toward an IPP model. A section of the paper almost explicitly describes a scenario involving a developer and a contractor.

### Evaluation Criteria

MR. STEYN: I now want to focus on the qualification criteria and process. The white paper describes a financial capability and an experience capability requirement. Moritz Borgmann, what are the broad requirements, and what is the qualification process?

MR. BORGMANN: There is a pre-bid phase with requirements relating to financial capability and experience. K.A.CARE is looking for either investment grade or a net worth of about \$100,000-per-megawatt bid or a somewhat equivalent criterion based on net profit. On the experience side, K.A.CARE is basically asking for experience comparable to envisaged plans.

Post-bid, there are four consecutive stages of evaluation. First, there is a completeness review. Second, there is a mandatory criteria assessment. This stage is subdivided into nine individual items. The facility size must be more than five megawatts. The commercial operation date must be within two years after the closing on the power purchase agreement. The bidder limit we discussed. There must be a level of site control. There must be an understanding of the permitting process; this is important because they are not requiring developers to have all permits already in place. The plant needs to be in an area pre-approved by the national grid operator. There must be a minimum resource assessment on the proposed site. The bidder must show a certain level of financial strength that is a little higher than the pre-bid phase requirement: investment grade or 10% net tangible worth compared to the cost of the proposed project. Finally, there is a local content requirement of at least 20%.

Once the mandatory boxes have been / continued page 14

retained control over the project and risk of loss until substantial completion. Therefore, the IRS said, no costs were incurred under the construction contract until acceptance of the project by the utility after substantial completion.

The utility had significant construction period interest that was considered incurred before 2008, but it and other pre-2008 costs did not exceed 10% of the total project cost.

The utility failed to claim a depreciation bonus on any of its assets in the year the project went into service. The IRS does not ordinarily rule in cases where a tax return has already been filed, absent special circumstances. The utility appears to have produced a letter from its regulators “requiring” it to claim the bonus. The utility could not just file an amended tax return because the decision to change course on depreciation is considered a change in “method of accounting” requiring IRS permission.

*The ruling is Private Letter Ruling 201313012.*

*The IRS made it public in late March.*

**BATTERIES** installed as part of rooftop solar systems qualify for a 30% investment tax credit, but the tax credit is subject to a “75% cliff,” the IRS said.

At least 75% of the electricity stored must come from the solar panels rather than the utility grid, and the percentage investment credit is reduced for the percentage of solar electricity versus other electricity stored in the first 12 months after the battery is put in service. If the solar percentage drops below the percentage in the first 12 months in any of the next four years, then there will be partial recapture of the “unvested” tax credit. The tax credit vests ratably over five years.

Thus, for example, if the solar percentage started at 90% in the first 12 months, then the investment credit would be 90% times 30%, or 27%. If the solar usage dropped to 80% the next year, then the original credit on these numbers would have been 80% times 30%, or 24%, for a 3% difference, but since only 80% of the original credit claimed remains / continued page 15



## Saudi Arabia

*continued from page 13*

ticked, K.A.CARE focuses on the third evaluation stage — the rated criteria. There are four rated criteria: financial power, experience, development status and local content. Depending on the extent to which rated criteria are met, K.A.CARE is willing to pay up to 30% more than what the bidder bid.

The fourth evaluation stage is the final project evaluation where K.A.CARE takes the actual PPA price bid and adjusts it to the rated criteria. Further to this process, up to a 23% discount can be applied.

MR. STEYN: Roberto de Diego, your thoughts on the pre-bid qualification criteria?

MR. DE DIEGO: In the white paper, it seems that three terms are used interchangeably: proponent or bidder, developer and supplier. The terms will need to be clarified.

A few comments on the requirements relating to financial capability and experience: it is market practice to create a special-purpose vehicle to own project assets. So the assessment of financial capability and experience should be taken up to the ultimate shareholder level. One question that arises is whether the financial strength of one joint venture partner can cover the whole financial strength of the joint venture in the same way that the technical and experience capabilities of one partner can cover the requirements for the whole joint venture.

MS. KLICH: What are your thoughts about the varying financial capability requirements?

MR. DE DIEGO: There is a set of criteria under the qualifications phase and another under the mandatory criteria. The financial capability requirements under the mandatory criteria relate to plant size. The bigger the plant, the greater the financial strength a bidder must demonstrate.

In the introductory round, bidders will need to tailor the plant in accordance with the allocated land which means that they will have no say regarding plant size. Subsequent rounds offer more flexibility for developers to select sites, whereby plants can range from five to 100 megawatts.

MS. KLICH: Describe the criteria relating to local experience.

MR. DE DIEGO: Maximum points are given to those with local experience in the power generation sector. I think that criterion should be wider. Very few Saudi Arabian companies have experience in the power generation sector. Maybe K.A.CARE could widen the criteria to include, say, self generation or other forms of energy-related experience.

MR. STEYN: Matt Campbell, how do you view the qualification and post-bid evaluation criteria? In particular, post-bid, one of the requirements is that tangible net worth must equal at least 10% of the project costs as a mandatory requirement for the equity providers. How does this compare to the bid standards in other international markets?

MR. CAMPBELL: In places like California, we have seen the financial criteria for the sponsor go up, and the requirements become more rigorous over time. I think that is because of the large number of bids received by the utilities in the tender process, so it makes sense to have rigorous financial criteria applied to bidders.

I agree with the point just made about experience in local power generation. It does seem that there is a pretty limited pool of potential bidders. Opening up that criterion makes sense.

The other important criterion is local content. As a manufacturer, we would be interested in investing in local content. To do that effectively, a couple things are necessary. You need volume predictability at an appreciable scale because a 100-megawatt production facility is not cost effective. The premium ascribed to a PPA may not be enough to cover the sub-scale costs of a production facility.

### Local Content

MR. STEYN: Yara Anabtawi, how do you see the local content rule, not only the mandatory requirement but also the big role in the rated criteria? In the introductory round, you get a maximum score if you have 60% local content.

MS. ANABTAWI: I see local content as probably one of the most challenging aspects of the program. K.A.CARE is trying to be realistic. The expectation is low at the outset; it will progressively increase. The way to calculate local content is discussed in the white paper, and K.A.CARE has come up with a formula to calculate what constitutes “allowable local expense.” It has also created categories based on technology.

For instance, for CSP parabolic trough technology, it has broken down systems into various components, whether service or equipment-based, and then assigned a local content factor. For instance, engineering as a service would have a 50% local content factor. To calculate total local content, or total allowable local expense, for a project that uses CSP parabolic trough technology, those percentages would be multiplied by the total cost of all the individual components. This provides a uniform way to measure all projects. Having said that, the paper breaks it

## IN OTHER NEWS

down into CSP parabolic trough technology, PV film, polycrystalline, wind, waste-to-energy and geothermal, but there is no mention of “fresnel” or CPV technology.

MR. STEYN: Roberto de Diego, your comments on local content?

MR. DE DIEGO: I don’t know to what extent you can speed up localization of an industry. The white paper suggests that the Saudi Electricity Company will have a list of approved local content providers. We need to make sure that this continues to be competitive so that it is not limited to a few companies.

One of the key goals of this program is the creation of local jobs. That is why we have the requirement that 1% of revenue be allocated to training and another 1% to R&D. There is a requirement two years after operation to furnish a training program. After two years of operation, we should be able to train locals to take over the local operations. I don’t know to what extent people and investors are willing to set up manufacturing facilities for certain components of the value chain — for instance, solar PV when there is excess global capacity. Any facility developed in Saudi Arabia should be world class and competitive on a global scale for it to make sense from an investment standpoint and also from a sustainability standpoint for the country.

MS. KLICH: The white paper sets job localization requirements. Benchmarking will be carried out based on the percentage of wages paid to Saudi nationals and the percentage of the jobs held by Saudi nationals. Do you think the minimum requirements are achievable?

MR. DE DIEGO: Yes. Submitting a plan two years from now is not a problem. We need to start training from day one, and we need to start preparing those people to take over as soon as possible. We cannot wait two years and then start training people.

MS. KLICH: Yara Anabtawi, do you agree?

MS. ANABTAWI: It may be achievable, but not easily. K.A.CARE has given us a grace period, so there is a lot that can be done in the time frame. It is a lot easier in certain technologies than others. There is also ambiguity as to the extent that these requirements would apply to operations and maintenance.

MR. STEYN: Stan Mitchell from Black & Veatch asks, “Can the localization requirement of equipment made in country be met? The CSP industry worldwide is diminishing, while in Saudi Arabia it is in its infancy.”

MS. ANABTAWI: The program promotes establishment, because little exists at this point in Saudi Arabia except for the balance of systems, and only recently we have seen a company that manufactures inverters locally. Other / continued page 16

unvested, the battery owner would have to repay 80% times 3% or 2.4% to the US Treasury.

The IRS explained its position in a private ruling to a rooftop solar company. The batteries are on the solar panel side of the inverter.

This is the third private ruling that the IRS has issued about batteries. In two earlier rulings issued to wind companies that planned to install large batteries at wind farms, the agency suggested that the 75% cliff did not apply. One wind company represented that electricity from the grid would account on average for just 3% of the electricity stored in a year, and the other represented that the percentage would be closer to 15%. The solar rooftop company said it could not make any representation about the share of solar electricity that would be stored.

*The ruling is Private Letter Ruling 201308005.*

*The IRS made it public in late February.*

**INDIAN TRIBES** can transfer federal tax benefits on projects the tribes own.

The IRS said in a private letter ruling made public in March that a tribe could transfer a 30% investment tax credit on a wind farm the tribe plans to own to a tax equity investor by leasing the project to the investor and electing to pass through the investment credit. This structure is called an “inverted lease.”

According to the ruling, the tax equity investor plans to operate the project and sell electricity back to the tribe or in the open market. The tax equity investor will pass most of the revenue it collects from use of the wind farm to the tribe as rent. It may also pay the tribe a share of the value of the investment credit as additional rent.

The reasoning the IRS used suggests that the tax equity transaction could also have been structured as a sale-leaseback, thereby allowing the tax equity investor to claim both an investment tax credit and depreciation on the project. The tribe would sell the project to the tax equity investor and lease it back. The tax equity investor, as the owner, could claim both benefits. However, the depreciation in that case would be straight-line depreciation over 12 / continued page 17

## Saudi Arabia

*continued from page 15*

than that, there isn't much in terms of power block components, mirrors or receivers. The whole idea is to bring that technology and tailor it to local conditions. It has to start somewhere.

MR. DE DIEGO: If you start a manufacturing facility this summer, it will not be ready by the time you have to bid in the introductory round. Long term, the local content requirement is a reasonable goal, but Saudi Arabia needs to make sure that the goal is achievable and that companies that invest in manufacturing facilities generate a good return having added manufacturing locally. At the end of the day, to have a sustainable industry, they will have to export and be competitive in world markets.

## Early awards are likely to be spread over a large number of companies.

### Grid Connection

MR. STEYN: Let's turn to a subject that has caused big issues in similar procurements, for example in South Africa, and that is grid connection. The white paper contemplates that the bidder will include transmission costs up to the interconnection point, but that beyond-the-meter costs will be evaluated by K.A.CARE and then applied post bid. This may affect ranking depending on the extent of beyond-the-meter costs.

Erik Voldner, could beyond-the-meter costs have a big impact on evaluation? Is there enough information for bidders to make decisions about sites to account for this?

MR. VOLDNER: Like a lot of the information in the white paper, this is a general guideline, and we should expect more information in the formal request for proposals. The white paper says bidders are responsible for pricing, up to and including interconnection, and then the additional beyond-the-meter

costs will be evaluated by a separate technical consultant hired by K.A.CARE, and these costs will be added to the PPA price. These beyond-the-meter costs will be paid for by the grid operator and by the offtaker — not by the developer — but will be included in the evaluation.

For the introductory round, this will be less of an issue because we will be dealing with pre-packaged sites, where everyone will be bidding with the same beyond-the-meter costs. Further consideration will have to be given in the first, second and subsequent rounds. This will be a very important consideration in the context of site selection, and it is not unique to Saudi Arabia. Any grid improvement costs need to be included in price.

When we move away from pre-packaged sites, grid impact studies will be carefully assessed by bidders to determine grid capacity and, in turn, how and where renewables can be deployed across the country.

MR. STEYN: Moritz

Borgmann, talk about construction of these interconnection works. The white paper currently contemplates that the national grid will construct the interconnection works, but then they will be owned by the project company. South Africa introduced a concept of self-build works because of the delays in constructing the interconnec-

tion facilities. With an overall renewables target of 54,000 megawatts, do you think that it is sustainable in the long run for the off-taker or the project company to construct all the interconnection works, or do you see a different structure being adopted?

MR. BORGMANN: No, it is not sustainable. A lot of work will be required, especially dialogue with relevant authorities, to make sure that infrastructure is ready.

MR. STEYN: One other process issue — the white paper currently contemplates applications to the national grid company for interconnection after the award of the power purchase agreement, but these costs have to be included in the bid stage. Roberto de Diego, do you see any issues arising here?

MR. DE DIEGO: Yes. In order to submit a competitive bid, you need to have all elements built into your business model. A couple of things are missing. One is what you just mentioned; we

would have to submit a proposal based on estimates, and any deviation of those estimates would go either in favor or against our business model.

There is another element that has not been taken into account in the PPA: what happens at the end of 20 years? We need to understand whether, at the end of 20 years, the plant will be decommissioned or whether it will be repowered further leading to signing of a new PPA. Do we continue producing with that facility at a lower tariff, or do we sell the power plant to a government body at a pre-agreed residual price? This should be clarified because it has a significant effect on the business model and underlying profitability considerations.

### Local Partners

MR. STEYN: A listener asks, “Is there an explicit or implicit preference for proposals involving Saudi firms? Is Chadbourne expecting bids involving international joint ventures? Have any such joint ventures already been announced?”

MR. CAMPBELL: The white paper suggests that any consortium will involve participation by a local company. My expectation is that we will see a lot of partnerships between international developers and local companies.

DR. BORGMANN: I agree. The program has been structured in a way that you will be much more competitive if you partner with entities “inside the fence.” There is currently a lot of activity among international renewable energy players to try to find partners. There is also a lot of activity on the Saudi side, and potential local partners are very busy identifying international partners. Partnerships will be the key to success.

### Power Purchase Agreement

MR. KEENAN: Fernando Tovar from GDF Suez asks, “The white paper indicates that the form power purchase agreement will be subject to Saudi common law. Do you know what that means?”

The white paper indicates that the PPA will be governed by Saudi law. It is fair to say that many foreign developers and international lenders are not going to be familiar with Saudi law. Saudi Arabian law is based on Islamic law, supplemented from time to time by regulations issued by the government.

The governing law of the power purchase agreement used for conventional IPPs — administered by the Saudi Electricity Company — is English law. Something that K.A.CARE may wish to consider is the inclusion of arbitration as a means to settle disputes.

/ continued page 18

years rather than front-loaded or accelerated depreciation over five years. The tax equity investor would also be limited to use of the depreciation as shelter for the rents that the tax equity investor receives from leasing the wind farm to the tribe, unless the lease is structured to stay within guidelines in section 470 of the US tax code.

Normally property owned by a tax-exempt entity or leased to such an entity does not qualify for any investment tax credit. However, the IRS said in the ruling that an Indian tribe is not a tax-exempt entity. Since the tribe is not subject to federal income taxes, the IRS said one never reaches the question whether the tribe is exempted from such taxes. Assets owned by or leased to government entities do not qualify for an investment tax credit either, but the IRS said the investment credit is lost only if the lease is to a federal, state or local government entity. An Indian tribe is considered a sovereign nation.

The ruling is Private Letter Ruling 201310001.

**PENSION FUNDS** outside the United States may get relief from US taxes.

The United States does not usually tax foreigners on gains from passive investments in US shares, bonds or other assets. Investments in real property are an exception, after the farm lobby persuaded Congress that Japanese investors were driving up the price of family farms and making it harder for children of farmers to buy their own farms. A 1980 law called the Foreign Investment in Real Property Tax Act or FIRPTA requires foreigners to pay tax at ordinary income tax rates on gains from sales of US real property interests, after Congress decided it was too hard to draw a line solely around farmland.

The Obama administration proposed on March 29 that foreign pension funds be exempted from FIRPTA. The idea is to put them on the same footing as US pension funds, which do not pay taxes on gains from passive investments in US real property.

*Tax changes like this one can take a long time to get through* / continued page 19

## Saudi Arabia

*continued from page 17*

There are other issues that come out of the summary in the white paper of the expected terms of the power purchase agreement. The power purchase agreement counterparty will be the Sustainable Energy Procurement Company or “SEPC.” SEPC, unlike the Saudi Electricity Company, will not be an entity with whom many participants are familiar. Bidders and lenders will be interested in the credit behind this entity.

There is a reference in the white paper to an endorsement from the Saudi government guarantor, and some further clarification on the identity of this guarantor will be useful.

Another interesting issue relates to negotiation of the power purchase agreement terms. In Saudi Arabia, as well as other countries in the region, we have become used to a tender process where bidders submit mark ups of the power purchase agreement and other request-for-proposals documents with their bids and, if selected as preferred bidder, they are given an opportunity to negotiate these mark ups to the exclusion of other bidders. K.A.CARE reserves the right to make changes to the power purchase agreement, but if it does so, it intends to notify all bidders of any intended changes and allow bidders the opportunity to submit revised proposals. It will be interesting to see how that is managed in a bid context. It may be difficult for K.A.CARE to manage.

MR. STEYN: The explicit statement that none of the project documents will be subject to mark-up negotiation is unusual in this region. However, South Africa did something similar. In South Africa, once project documents were finally issued, no mark ups were permitted.

MR. KEENAN: Another issue is that failure to meet the commercial operation date will lead to imposition of liquidated damages. Instead of cash penalties, liquidated damages will be accounted for by shortening the power purchase agreement term by three days for every one day that the project is delayed. This raises a question as to how that risk can be passed down to an EPC contractor. Any reduction in the power purchase agreement term could create an issue for lenders depending on the tenor of the debt.

MR. DE DIEGO: Another interesting point is that monthly payments for energy will be capped at 105% of the contracted amount. We need to understand exactly what this means for the business model because, after 105%, the price reverts to the cost of a simple-cycle turbine. We need to understand whether the actual contracted amount will be calendarized monthly based on the solar irradiation to avoid reaching that 105% in, say, August, and having too much leeway in, say, December.

### Next Steps

MR. STEYN: Erik Voldner, what should people be focusing on today if they want to participate in the program?

MR. VOLDNER: In the next couple weeks, the draft request for proposals and draft power purchase agreement should be issued by K.A.CARE for comment. K.A.CARE plans to review the comments and issue the request for qualifications in two months. That will be the time to form partnerships and select projects.

K.A.CARE has indicated that the final request for proposals will be issued to qualified bidders in about three months. Qualified bidders will then have six months to prepare bids.

By the time the draft request for proposals is issued, there would be a lot more clarity on local content requirements, how partnerships should be formed and other important considerations. Then, hopefully, by the time the final request for proposals is issued to qualified bidders, six months will suffice to prepare bids. K.A.CARE will then require one to two months to select winners and sign contracts.

As mentioned earlier, this is an aggressive schedule. What K.A.CARE has done — which is very good — is that it has not just said that the first round will take eight to 12 months. It has broken down the process, so that if there is a delay in any one of the milestones, such as comments management or a substantial rework of the draft power purchase agreement, then the rest of the timeline can still be assumed to be held.

By Q4 2013 or Q1 2014, the introductory round projects should be awarded and the power purchase agreements signed, and construction of the projects should get underway.

As soon as one round is done, qualification will be initiated for the subsequent round; K.A.CARE is looking to move quickly. ☺



# Iran Sanctions Enforcement Not Keeping Pace With Rhetoric

by Ramsey B. Jurdi, in Dubai

A critical look at the US record of enforcement of sanctions against Iran reveals that prosecutions and penalties are not keeping pace with legislation and diplomatic developments.

The Office of Foreign Assets Control or “OFAC” appears hampered by a lack of resources to investigate and prosecute sanctions violators, and the State Department remains reluctant to step on diplomatic toes, particularly those of China and India, through use of extraterritorial laws. New sanctions have been enacted on average every three to four months over the last three years, but much of this legislation has been either symbolic or used sparsely.

Notwithstanding this, sanctions are severely affecting Iran. However, this can be significantly attributed to the imposition of a fairly broad sanctions regime by the European Union in January 2012. The Iranian economy is reeling from severe inflation and reports of profiteering are increasing. US diplomacy no doubt played a key role in convincing the EU to shut its energy markets to Iran, but similar efforts with China and India, now Iran’s key markets, have thus far been ineffective. Similarly, US threats of sanctions against foreign entities conducting business in Iran’s energy sector have often gone unheeded in the absence of credible and aggressive enforcement efforts.

Legislation and enforcement activities over the past three years fall into three broad categories.

The first and most active category of sanctions enforcement is restrictions on US companies and their foreign subsidiaries, with a focus of enforcement on banks such as HSBC and Standard Chartered. Imposition of penalties on non-US companies, under the Iran Sanctions Act, is the second and largely symbolic front for US efforts to isolate the Iranian economy. Third, denial of US correspondent accounts for non-US financial institutions conducting significant transactions with Iran is an additional area of focus.

This article examines each of these three categories and attempts to draw conclusions about the future of enforcement efforts.

/ continued page 20

## IN OTHER NEWS

*Congress. The next opportunity for such changes will not come until Congress takes up corporate tax reform. Most lobbyists do not expect action on corporate tax reform before 2014, although the tax-writing committees in both the House and Senate are starting to focus on the details.*

**PRODUCTION TAX CREDITS** for US power plants that generate electricity from wind, geothermal fluid or steam or “closed-loop” biomass will be 2.3¢ a kilowatt hour during 2013.

They remain unchanged at 1.1¢ a kilowatt hour for other biomass, landfill gas and ocean energy projects.

Production tax credits are claimed for 10 years after a project is first put in service on the electricity sold to third parties. Projects must be under construction by December 2013 to qualify. There is no deadline to put them in service. Credits can only be claimed on projects in the United States. It does not matter if the electricity is sold across the border into Mexico or Canada. “Closed-loop” biomass is any plant grown on a so-called electricity farm exclusively for use as fuel in a power plant.

The tax credit amount is adjusted each year for inflation. The IRS calculates the inflation adjustment and announces it each year on or around April 1.

When the tax credits were first enacted in 1992, Congress wrote into the statute that they would start to phase out automatically if electricity prices reach a high enough level that a subsidy is no longer needed. Congress said that level would be reached at 8¢ a kWh. The government looks at the average price at which contracted electricity from the same energy source was sold the year before. Spot sales are ignored. The IRS said 8¢ in 1992 dollars translated into 12.05¢ a kWh in 2012. The credit phases out as the average contracted price moves across a band of the next 3¢ per kWh.

The IRS said the average contracted price at which wind electricity / continued page 21

## Iran Sanctions

*continued from page 19*

### Enforcement Against US Companies

US banks and foreign subsidiaries of US companies have been the primary focus of enforcement and legislation, respectively, over the past year. Enormous fines were imposed on US branches or subsidiaries of HSBC and Standard Chartered, encouraging a significant adjustment in behavior worldwide. Further, in August 2012, the US Congress closed a loophole that allowed foreign subsidiaries of US companies to conduct transactions with Iran if the US parent company and US citizens were not involved. As a result of these developments, the focus should shift over the next year to trade-related enforcement actions.

OFAC receives several hundred “leads” per year and opens more than 100 investigations in response. On average, approximately 20 enforcement actions a year result from these investigations. These numbers are surprisingly low given the broad reach of sanctions and the political importance of the Iran issue.

A review of recent OFAC enforcement actions reveals a focus on financial institutions, small trade-related violations, and voluntary disclosures. This pattern of targets and the relatively low number of enforcement cases indicate a reliance on voluntary disclosures, a focus on high-profile actions that will have a deterrent effect and limited resources to investigate violations.

Change should be coming within the next year as a result of recent legislation, namely the Iran Threat Reduction Act of 2012 or “TRA,” but any change will be tempered by sequestration in the US budget. US agencies have been ordered to make across-the-board reductions in spending in each of the next nine years. OFAC has been ordered to cut its spending by 8.2% for the remainder of this year. The cuts may lead to furloughs of government employees.

The TRA tightens sanctions in several areas. One such area is a prohibition on foreign subsidiaries of US companies conducting any transaction that would be prohibited for a US company to conduct directly, regardless of the nature and extent of connections between the subsidiary and the US parent.

As a result of the TRA, the activities of foreign subsidiaries of US companies are now within the focus of OFAC and provide a new front for enforcement. Although the actual number of enforcement actions will probably not increase, particularly in light of US budget cuts, a renewed focus on trade-related violations is likely. In a sign that the legal industry is moving in anticipation of this pivot, there has been a noticeable uptick in

internal investigations, voluntary disclosures and compliance audits in the six months since the TRA was enacted.

### Enforcement of the Iran Sanctions Act

The US government has had authority under the Iran Sanctions Act since 1996 to impose penalties on non-US entities for certain trade with Iran. However, this authority was not exercised by the executive branch. Congress has been putting pressure on the Obama administration to use the authority by passing a series of amendments, beginning in July 2010 with the Comprehensive Iran Sanctions, Accountability and Divestment Act. The amendments expand the activities subject to penalty, add to the available penalties and remove much of the discretion previously afforded to the executive branch to impose penalties.

Since reinvigoration of the Iran Sanctions Act, the US State Department, which has primary jurisdiction for enforcement but works closely with OFAC, has penalized approximately 18 companies for energy-related transactions with Iran. This equates to an average of approximately one company being penalized every two months. When looking beyond the statistic to the size and relevance of the companies that have been penalized, a record of sparse enforcement is evident.

Of the 18 companies examined, six appear to be Iranian-controlled, eight appear to be small to medium-sized companies, and four are major players. The deterrent value of penalizing Iranian-controlled or affiliated entities can be disregarded. Similarly, penalizing small to medium companies, which likely have few US links, is of limited value. That leaves arguably only four notable actions under the Iran Sanctions Act over the course of 33 months. The actions were against Belarusneft, Petróleos de Venezuela, Sytrol and Zhuhai Zhenrong Company.

Moreover, the State Department exercised restraint when selecting the penalties to impose on the 18 targets. The Iran Sanctions Act requires that the executive branch impose a minimum of five penalties (recently increased from three) from a list of 12. The penalties range from the comparatively minor, such as no export assistance from the US Export-Import Bank, to the severe, such as a blocking of all transactions with the United States. The State Department has consistently imposed the minimum of five penalties and, with limited exception, chosen penalties from the lighter side of the spectrum.

Despite this sparse record of enforcement, the State Department has used the Iran Sanctions Act effectively and diplomatically, and we do not foresee a marked increase in enforcement actions. The Iran Sanctions Act is a cogent threat to non-US companies conducting transactions with Iran, but its

extraterritorial application creates sensitivities among foreign governments. Accordingly, the State Department typically reaches out to targeted entities prior to imposing penalties and seeks a commitment from the targeted company to wind down or cease Iran transactions. Given this practice, and in light of potential diplomatic repercussions, enforcement levels are likely to remain steady.

### Denial of US Correspondent Accounts

Over the past year, the US has effectively isolated the Iranian financial sector, in part by threatening non-US banks with a denial or closure of US correspondent bank accounts if the non-US bank conducts significant financial transactions with Iranian financial institutions. Section 1245 of the National Defense Authorization Act, which was enacted in December 2011, has forced many banks to stop transactions with Iranian financial institutions, including the Central Bank of Iran, under threat of losing their ability to conduct dollar-denominated transactions. The threat of penalty has thus far been effective, and the US has not yet actually penalized a bank under section 1245.

However, the effect of section 1245 has been diluted through the executive branch's broad use of its waiver authority. The US president is permitted by section 1245 to issue six-month waivers for any jurisdiction that significantly reduces its volume of crude oil purchases from Iran in the preceding period. Waivers have been issued for much of Europe and the Far East (including China), and financial institutions established within those jurisdictions can continue doing business with Iranian banks without threat of penalty under section 1245.

Without question, section 1245 has been effective, and Iranian companies are facing difficulty when conducting cross-border transfers. However, the gaping hole in the US enforcement campaign is China and India, which are taking advantage of Iran's loss of other markets to buy Iranian crude at discounted rates. If the political conflict with Iran continues to escalate apace, and the US and the EU seek to weaken the Iranian regime further through economic means, then the US will need either to begin sanctioning Chinese and Indian financial institutions or to convince both countries to stop buying Iranian crude. Both of these choices are unappealing for the US administration, particularly given the sensitivity of trade relations between the US and China.

Looking forward, a large batch of waivers was renewed in March 2013 and will not come due for renewal again until August 2013. Accordingly, we do not / continued page 22

was sold in the United States in 2012 was far below the level at which the credits would phase out. It has not calculated the average sales prices for electricity from the other sources.

*The average price at which wind electricity was sold fell last year for the first time in several years. It was 4.53¢ a kWh in 2012, compared to 5.31¢ in 2011, 4.68¢ a kWh in 2010, 4.22¢ in 2009, 4.32¢ in 2008, 3.60¢ in 2007 and 3.29¢ in 2006.*

**PROPERTY TAXES** paid to a US state or local government are usually deductible for federal income tax purposes, but not in every case.

The IRS said in an internal legal memorandum that it made public in March that fire prevention fees assessed against property owners in parts of California where the state is responsible for fighting fires are not deductible as property taxes. The fees are \$150 per structure. They must be paid annually.

The IRS said the California legislature viewed the levies as "fees" rather than "property taxes" when it authorized them. Taxes require a two-thirds vote in the legislature. Fees require only a majority vote.

However, even if that were not the case, the IRS said the fees fail three other tests to be considered deductible property taxes.

A property tax is deductible only if it is imposed at a "like rate," meaning it must be uniformly applied based on an independent variable, like property value or parcel or structure size. This one was a flat rate per structure.

To qualify as a property tax, the levy must apply to all property within the jurisdiction of the tax authority imposing it. The State Board of Equalization collected the fire prevention fee. It has jurisdiction over the entire state, but the fee was limited to a few areas where the state was responsible for fighting fires.

Finally, an amount cannot be deducted as a property tax if it is collected from specific properties in order to pay for a local benefit. An example would be an extra charge / continued page 23

## Iran Sanctions

*continued from page 21*

foresee material activity with respect to section 1245 within the coming six to 10 months. However, the US could choose to make an example out of a bank in a non-allied and non-exempt jurisdiction, as it has done with the Iran Sanctions Act, in order to spur further conformity and set the stage for discussions when waivers come due for renewal.

### Other Areas to Watch in 2013

In addition to the enforcement efforts discussed earlier, over the next year, the US will also be looking to close off avenues for circumvention of the restrictions on financial transactions, namely transfers of precious, raw and semi-finished metals. These items, as well as the Iranian shipbuilding industry, were the target of additional sanctions in January 2013 that will come into full effect in July 2013. Further, the US has recently opened a new front for enforcement through use of Securities & Exchange Commission disclosure requirements. Effective February 2013, issuers required to file a 10-K or 20-F annual report or a Form 10-Q quarterly report with the SEC must disclose certain transactions with Iran, notwithstanding that the transactions are legal. Such disclosures must be accompanied by a stand-alone statement highlighting the presence of an Iran disclosure in the broader filing. In the case of non-US companies, the executive branch is then required to initiate an investigation into whether to impose penalties under the Iran Sanctions Act. This specific area is expected to be active throughout 2013.

Lastly, the US Congress is expected to keep up the pace of additional sanctions legislation every three to four months, which in the past year has focused on expanding the Iran Sanctions Act and limiting the president's discretion with respect to the imposition of sanctions under both the Iran Sanctions Act and section 1245. The Nuclear Iran Prevention Act currently pending before Congress contains no novel sanctions, but further targets non-US companies and financial institutions.

New legislation is only achieving incremental changes in behavior and trade. The US executive branch already has a wealth of tools that it can employ to change behavior, yet it understandably continues to tread softly. It is only a matter of time before the US will have no choice but to use its sanctions stick more actively and aggressively. ☺

## Synthetic Power Contracts

*by John Frenkil, in Los Angeles, and John Marciano, in Washington*

Renewable energy projects traditionally attract financing only after securing a long-term contract to sell the electricity to a creditworthy offtaker at a relatively fixed price. The project development is hard enough, but in today's market, finding a power contract is becoming exceedingly difficult. A developer can ordinarily expect a financier to lend or invest only against "contracted revenues."

At the same time, developers are sometimes reluctant to sign PPAs if it means locking in a price for power for the next 20 years that may be below projected electricity prices. As natural gas prices plummeted in the last few years, so have the prices at which utilities are willing to buy power.

A synthetic power contract may provide an answer.

However, such contracts should be entered into with caution, as parties can literally lose the wind farm, solar or other power project, or their investment in it, if their interests are not adequately protected.

Project owners traditionally generate revenue through either long-term power contracts or "PPAs" or through open market — merchant — sales. Long-term PPAs, typically 10 to 20 years, guarantee the project a stream of revenue for an extended period of time by selling the electricity output at a fixed price to a creditworthy purchaser, such as a utility. PPAs distinguish between capacity and energy. Capacity payments are payments for the ability of the utility to call on the project for power. The energy price is a per-mWh charge for the electricity actually delivered. Capacity payments were common in large thermal power projects in the distant past, but it is becoming harder to find them. All PPAs cover energy.

The energy price generally covers operating costs, payment of principal and interest on long tenor debt and recovery of capital with a reasonable return. Another approach for projects to generate revenue is to sell the electricity into the open market. These sales, which are not subject to a fixed term, provide projects with a significantly lower degree of cash flow certainty than traditional PPAs due to variable, market-based pricing and, depending on the dynamics of the project, potentially a greater possibility of curtailment. Curtailment means being shut down temporarily, for example during a period when transmission

lines in the area are full so that there is no way to get electricity to the grid.

### Synthetic PPA

A synthetic PPA is basically a form of hedge. In one form of synthetic PPA, the project sells its electricity on a merchant basis, but enters into a contract with a third party that provides a floor under the electricity price.

A hedge works both ways. The project pays the counterparty if electricity prices are above a benchmark price. The counterparty pays the project the difference if they fall below the benchmark.

The payments may be calculated around a notional quantity of electricity regardless of what the project actually produces or they may be paid based on actual output.

In some cases, the benchmark prices are the same for each side of the arrangement. In others, there is a range between the two targets in which neither party pays. Essentially, there is a zone of indifference. The hedge provides insurance against declines in electricity prices and, depending on how it is structured, it may also allow the project owner to earn more if electricity prices rise.

On a spectrum measured by cash flow certainty, a synthetic PPA falls somewhere between the relative predictability of traditional PPAs and the less certain (and in the eyes of financiers, risky) method of selling power on the open market.

Synthetic PPAs are generally limited to locations where hedging counterparties can be found — therefore, areas that are deregulated and that have liquid spot markets for energy sales that permit the sale of the electricity output into a day-ahead or real-time market. These markets include the New England Power Pool (NEPOOL), New York Independent System Operator (NYISO), the Electric Reliability Council of Texas (ERCOT), the PJM Interconnection (PJM) and the Southwest Power Pool (SPP), among others.

Also, synthetic PPAs may be appropriate under certain circumstances in markets such as California, where the California Public Utilities Commission has required certain projects to set the commercial start date under a PPA several years into the future to better match anticipated load growth in the California market. For such projects that have been fully permitted and are ready for operation before the PPA starts, a synthetic PPA may let the project generate revenue in the meantime with a floor under the interim revenue so that the project can be financed.

/ continued page 24

## IN OTHER NEWS

on houses in an area to pay for new sidewalks or water pipes.

*The IRS said that personal property taxes — in contrast to real property taxes — can also be deducted, but only if they are a percentage of property value. It said there is no such restriction for taxes on real property. The memorandum is ILM 201310029.*

**NEW SWAP RULES** that took effect on April 1 threaten to make some guarantees and security packages in loan transactions unenforceable, according to Andrew Coronios and Monika Szymanski in the Chadbourne New York office.

The rules were issued by the US Commodity Futures Trading Commission under the Dodd-Frank Act. The CFTC took the position in a recent no-action letter that “swaps” include guarantees of swaps.

The problem is that every guarantor of swap obligations must be an “eligible contract participant” as defined by the CFTC in order for the guarantee to be enforceable. Lawyers are interpreting this also to affect security agreements and other collateral covering swap obligations. To qualify as an “eligible contract participant,” the entity must have more than \$10 million in assets, a net worth of more than \$1 million or backing for its obligations through a letter of credit, capital contribution agreement or similar arrangement from an entity with more than \$10 million in assets.

Borrowers are often required to hedge interest rate or currency risk, and the loan documents are often written so that the guarantee and security documents cover not only the loan obligations but also the swap obligations. “Under the new rules, if a guarantor or grantor of security is not an eligible contract participant, then the entire guarantee or security document may be unenforceable, even where the direct counterparty to the swap itself is an eligible contract participant,” Coronios and Szymanski said. They said the problem usually comes up where a borrower is an eligible / continued page 25



## Synthetic PPAs

*continued from page 23*

Electricity price forecasts are for a recovery in prices to pre-crisis levels in the next three to five years. Synthetic PPAs may provide a useful stopgap for project companies that do not want to be locked into current power prices for the long term.

### Three Structures

There are several ways to structure a synthetic PPA. The hedging counterparty is typically a financial institution. At a basic level, the main structures are contracts for differences, options — put options, call options and collars — and pure commodity hedges.

In a contract for differences, there is no physical exchange of power between the buyer and seller because the power project sells the electricity into the open market, not to the hedging counterparty. The counterparty, which may be a factory, computer company or other user of large amounts of electricity, independently buys power from the spot market to meet its own needs. However, both parties have an interest in a hedge. The power project would like to sell at fixed prices but can only sell on a merchant basis. The counterparty would like to buy at fixed prices, but can only buy at floating prices. They enter into a swap. The counterparty pays the power project a fixed price, and the power project gives the counterparty back the floating price it receives in the merchant market. Rather than pay the full amount, they net, and there is a payment in only one direction.

The parties agree on a “strike price” for energy. This price is subject to escalation over the term of the contract for differences, which is typically three to five years. If the spot market sale is greater than the strike price, then the power project pays

the difference to its hedge counterparty, and vice versa.

Contracts for differences are usually contracts around a notional quantity of electricity.

The project may enter into a literal fixed-for-floating swap instead, where the owner swaps the hourly clearing price when it sells its power into the market. This price floats every hour and is used as the index for the swap.

There are two types of options: physical options, involving the power produced by the project, and financial options, involving future revenue derived by the project.

In a physical option, a party has the right to sell or “put” or to purchase or “call” electricity in the future, while in a financial option, the parties have the right to put or call the future cash flows from an actual or hypothetical sale of electricity. The term of these options can range from days to several years, and the option may cover only a portion of the output or the entire output from a project.

Under both types of transactions, prices are pre-set with an additional cost associated with the option. The price of the option is determined by the proximity of the strike price to forward price forecasts in the power markets and the length of the option term.

Put options are a physical hedge in which the option buyer purchases the right to sell electricity at a certain strike price. If the price of the electricity drops below the strike price, then the option buyer will exercise the option to sell its power for more than the market price. Conversely, if the price per kilowatt hour rises above the strike price, then the option buyer will let the option expire and earn the market price of the electricity.

Call options are the inverse of put options where the option buyer purchases the right to buy electricity at a certain strike price. If the price of the electricity rises above the strike price,

then the option buyer will exercise the call option and, if not, then it will let the option expire. A collar is a hybrid approach in which the buyer sells a call option and buys a put option, or vice versa. This places a cap on gains and a floor on losses, while also eliminating the cost of the option.

Alternatively, the parties can choose to hedge the price of underlying commodities, such

**Synthetic PPAs are being used to finance projects in place of traditional long-term power contracts with utilities.**

as the price of natural gas or unbundled renewable energy certificates that are sold separately from the generated electricity.

## Financing Issues

Lenders have been willing to finance projects with synthetic PPAs, provided key issues are addressed in the agreement.

Due to the large value at risk created by the amount of the settlement exposure, the hedging counterparty will generally seek to share rights in the collateral package, which are traditionally held by lenders in a project financing. This is the most significant area of tension in negotiating a synthetic PPA because the project owner is likely to have already pledged its assets — such as project revenues, contractual rights, physical assets and equity — to senior lenders. Therefore, the pool of collateral available to secure the hedge agreement may not be large enough to protect the counterparty without creating overlapping claims between the counterparty and existing lenders.

Accordingly, the counterparty will seek a senior lien on specific collateral and step-in rights in order to secure its exposure on the hedge, while lenders will want to ensure that the provisions in the hedge agreement do not prejudice their rights under the intercreditor agreements or otherwise cause their protections to fail. For example, the counterparty will prefer that the payments associated with settlement of the hedge be treated on the same level as operation and maintenance expenses in the project waterfall, which are typically paid out at a priority over the senior debt. However, lenders will argue against such treatment for the counterparty's payments, while also requiring that their consent to any material modifications to the project owner's obligations. Also, the lenders may push back on various provisions negotiated by the counterparty, including an obligation by the project owner to post liquid collateral with the counterparty upon the occurrence of certain trigger events.

Termination rights are another issue of focus in negotiating a synthetic PPA. In order to ensure that the project owner is not subject to differing standards, lenders will want to see the termination rights, as well as termination events under the hedge, as closely aligned as possible with the events of default under the loan and intercreditor agreements. Also, lenders may ask for a brief cure period after an event of default under the hedge agreement in order to give the lenders a chance to cure any default and thus preserve the value of the hedge.

The short term of a synthetic PPA, typically 10 or fewer years, is a concern for lenders because it creates / continued page 26

## IN OTHER NEWS

contract participant but its obligations are guaranteed or secured by affiliated companies that may not be.

*They recommend taking a number of actions, including not accepting guarantees or security from ineligible entities and adding a “severability clause” that prevents the whole guarantee or security package from being invalidated if only part of it is unenforceable.*

**NORTH AMERICAN DEVELOPMENT BANK** loans are not “subsidized energy financing,” the IRS said.

The North American Development Bank is a bi-lateral development bank that was capitalized by the US and Mexican governments, but that raises money to make loans by issuing debt in the US capital markets. The bank lends long-term debt at fixed rates to help finance projects up to 62 miles north and 186 miles south of the US-Mexican border. It lends to projects that help with potable water supply, wastewater treatment, water conservation, municipal solid waste management, air quality improvement, energy efficiency, renewable energy and public transportation.

A US utility building a wind farm in the US worried that if it borrowed from the bank to finance its project, the IRS might say the loan is “subsidized energy financing.” That would lead to a reduction in the amount of production tax credits that could be claimed on the project.

The IRS said the bank's loans are not subsidized energy financing because they are not loans under a federal, state or local program a principal purpose of which is to provide subsidized financing for projects that conserve or produce energy. The bank has a broader mandate. Also, there is no subsidy to the borrower. The bank finances its own activity in the capital markets. It borrows at a low rate, without the benefit of a government guarantee, and relends at a higher rate intended to earn a profit.

*The IRS addressed the issue in Private Letter Ruling 201308021. The ruling was released to the public in late February.*

*/ continued page 27*

## Synthetic PPAs

*continued from page 25*

a period of unhedged merchant tail and will require the debt to be amortized in a relatively short amount of time. Nevertheless, lenders will finance projects using a synthetic PPA if there is sufficient price protection.

While traditional long-term PPAs rarely have index-based escalation factors because of the uncertainty caused by shifts in the power markets over time, parties to a synthetic PPA may be able to negotiate for an escalation factor because the term of the agreement is typically less than half that of a traditional PPA. By setting an escalation factor for the strike price over a relatively short period of time lasting fewer than ten years, the synthetic PPA will more accurately align the price of the agreement with that of electricity in the power markets, thereby reducing the exposure of all parties to volatile pricing movements.

Under a project financing associated with a traditional long-term PPA, lenders vote on a weighted basis, according to their exposure to the transaction. Under a synthetic PPA, the lenders and hedging counterparty can choose to arrange voting rights in one of several ways. The counterparty may defer to the lenders and is not entitled to voting rights. The voting may be based on the exposure of the counterparty. Alternatively, the voting rights may be based on the occurrence of a particular event, such as acceleration of the senior debt.

Synthetic PPAs face some regulatory uncertainty. The Commodity Futures Trading Commission, which is implementing the Dodd-Frank Act, has not said yet to what extent parties to synthetic PPAs will be subject to CFTC regulation, but it is clear that parties to hedges will face new limits on positions and capital exposure, as well as record-keeping and reporting requirements. There is a limited exemption for “end users.” The scope of the exemption is still being debated. Parties will need to factor these potential new regulatory requirements into their modeling for projects using synthetic PPAs. ☺

## China Sets New Energy Goals

*by Edwin Lee, in Beijing*

Reaction to the new five-year energy plan that China released in late January has been mixed.

Private and foreign investors are happy with the plan because it opens new doors for investment. There should be more renewable and alternative energy projects. Some manufacturers of solar photovoltaic modules should start to see more cash flow in the near term.

On the other hand, local governments are now under pressure to limit their energy consumption as a percentage of domestic output so that the economy can continue growing without the need for more energy acting as a brake on growth. The monopoly positions and power held by state-owned energy companies, like the China National Petroleum Corporation, Sinopec and the State Grid, will come under challenge.

The plan sets energy development targets within China for the period through 2015.

In so doing, it also identifies potential opportunities for equipment vendors, developers and investors in other countries.

Total investment for the period is expected to reach RMB 13.5 trillion, of which RMB 8.5 trillion will be spent on additional generating capacity and RMB 5 trillion will be spent on energy storage and transmission and pipeline projects. The majority of these funds will be raised from private investors in the market.

The plan tells investors, developers and financial institutions how to play in the energy sector in China. Market participants face heightened strategic and policy risks by investing without understanding the plan. It is the 12th five-year plan. The plan incorporates more detailed sub-plans for specific sectors, such as coal, shale gas, wind and solar. Some sub-plans, such as for coal seam gas, are still in draft.

The plan tackles pollution by placing caps on total energy consumption and energy consumption intensity. This is expected to drive substitution of renewable and alternative energy sources for fossil fuel for generating electricity. The high rates of Chinese economic growth in the past 30 years have led to rapid increases in energy consumption, a lot of it tied to coal, and caused the serious environmental pollution.

## Fundamental Principles

No Chinese government plan is without a set of fundamental principles. The plan lists eight. They will have to be reflected in rules and regulations issued by the various energy-related ministries under the State Council and local governments to implement the plan. As a legal matter, the fundamental principles override any contrary instructions by government ministries.

The eight fundamental principles are “giving priority to conservation, relying on domestic resources, encouraging diverse development, protecting the environment, promoting scientific and technological innovation, deepening reform, expanding international cooperation, and improving the people’s livelihood.”

These are the same principles that were in the Energy Policy 2012 published by the information office of the State Council in October 2012. The difference between Energy Policy 2012 and the five-year plan is the latter set specific targets and clarified the responsibility of energy-related ministries. The five-year plan has new sections on energy storage and transportation as well as a cap on energy consumption.

## Targets

The plan set the targets for energy development by 2015 in seven respects.

There are targets for total energy consumption and energy efficiency by 2015. Both will be capped in an effort to limit air pollution. The target for total energy consumption is 4.0 billion tons of equivalent standard coal. Actual consumption was 3.25 billion tons of equivalent standard coal in 2010. The cap allows 4.3% growth annually from 2011 to 2015. As the barometer for economy, the electricity consumption will be capped at 6.15 trillion kilowatt hours in 2015, compared to 4.2 trillion kilowatt hours in 2010, or an 8% annual growth rate in load. (This compares an annual growth rate of 0.7% in the United States.) In 2012, the electricity consumption increased by 5.5% with 7.8% GDP growth. The projected 8.0% growth rate in electricity consumption is viewed in China as optimistic. Considering that the energy consumption per unit of GDP is projected under the plan to drop by 16% in 2015 compared to 2010, the consumption cap should not be an impediment to economic development.

There is a target for fuel sources. The primary energy supply capability will reach 4.3 billion tons of equivalent standard coal, of which 3.66 billion tons will come from domestic sources. This means that 85% of the primary energy

/ continued page 28

**TAX EQUITY TRANSACTIONS** are facing tougher vetting by the IRS.

The agency is losing patience with deals where promoters talk about selling tax credits and structure the transactions so that the tax equity investor has little real economic exposure.

A memorandum written by the IRS associate area counsel in Detroit to an agent about a tax equity transaction that is under audit and involves historic tax credits is instructive. The memo is Field Service Advice 20124002F. The agency released it in March.

A 20% tax credit can be claimed on the cost of rehabilitating historic buildings. A real estate developer in the business of renovating historic properties undertook a project. The renovation took at least two years.

The developer arranged for two other entities to be formed. One was a partnership between an affiliated company owned by individuals who also owned the developer and a “fund” of tax equity investors. The partner affiliated with the developer managed the partnership; the fund had no say in management. The other new company formed was a subsidiary of the affiliated company. This subsidiary leased the historic building to the partnership and lent the partnership the money to do the renovations. The partnership hired the developer to do the actual work. The fund of tax equity investors made a small capital contribution to the partnership during construction, but its real capital was not put in until after the renovations were completed.

The partnership paid the developer a developer fee and then hired the developer to manage the property for a fixed fee plus a percentage of monthly gross receipts plus an additional supervision fee of a percentage of any capital improvements that have to be undertaken in the future. The partnership is paying the entity that leased it the building fixed rent plus a percentage of the partnership’s operating income, not to exceed 100% of net cash flow.

The capital contributions by the fund were 90¢ per dollar of historic

/ continued page 29

## China

*continued from page 27*

will depend on self-supply. According to the plan, the percentage of imported petroleum as a share of total petroleum consumption has risen from 32% at the beginning of the 21st century to the present 57% in just 12 years. The latest information on the website of the National Development and Reform Commission (NDRC) shows a figure of 56.4% in 2012 based on 268.65 million tons of net imported crude oil in 2012. (Oil in China is measured in tons rather than barrels.) Experts believe that the real figure may be higher. The United States is expected to be a net oil exporter by 2030. These trends suggest China has a longer way to go to reach its goal of energy independence.

The plan also sets targets for energy structure optimization, construction of national comprehensive energy bases, eco-environmental protection, energy utilization by residents in urban and rural areas and reform of the energy system.

### Opportunities

Anyone looking for opportunities can find them in the list of tasks identified in the plan.

The plan lifts hurdles for foreign and domestic private investment in energy supply, transmission, utilization and efficiency, although foreigners are required in most cases to have local partners who retain control.

The coal industry is expected to go through a period of both consolidation and expansion. The government wants 20 coal producers to reach a larger scale. This will be done through consolidations and acquisitions. The government would like 10 major coal producers with 100 million tons of coal production capacity and 10 with 50 million tons of coal production capacity to be formed by 2015. These 20 coal producers are expected to account for 60% of the total coal production in China. There were seven existing coal producers with production above 100 million tons in 2012. Shenhua Group ranks first with its 407 million tons of coal production, which is more than twice that of the second producer, China Coal Group. Small mines with production capacity below one million tons (the threshold in Shanxi) will be shut down or merged. Each province sets its own threshold. Small mines, no matter whether privately-owned or state-owned, will be under heavy pressure to close. They must either invest more funds to increase their production capacity or sell their mines to larger producers.

The Chinese government has made mine safety a priority and believes that the bigger the mining company, the safer its mines will be. Mine safety is the key driver behind the consolidation and expansion. The State Administration of Coal Mine Safety has published a list of 643 coal mines scheduled to be shut down. Critics charge that the forced shutdowns violate domestic laws protecting the ownership of property.

Unrestricted domestic coal production would be expected to reach 4.1 billion tons. The plan will limit output to 3.9 billion tons. Domestic oil production is expected to stabilize at around 200 million tons, and natural gas is expected to stabilize at around 130 billion cubic meters.

### Unconventional Gas

Shale gas is an emerging industry and presents opportunities and risks for investors.

China will strengthen the exploration and development of coal-bed methane and shale gas. Two coal-bed methane industrial bases will be built in the Qinshui Basin and east of the Ordos Basin. China will accelerate its resource survey in order to improve estimates of domestic shale gas deposits. Like the US, China is wrestling with the challenges of developing shale gas, such as environment pollution and water consumption. China hopes to confirm additional proven reserves of 600 billion cubic meters of shale gas and one trillion meters of coal-bed methane and to be producing 6.5 billion cubic meters of shale gas and 20 billion cubic meters of coal-bed methane a year by 2015. China imports natural gas from Turkmenistan and Kazakhstan. The additional shale gas and coal-bed methane will not displace any imported gas since China is still wrestling with energy shortages and coal-fired power plants may convert to gas.

China plans to open its shale gas industry to foreign and domestic private investment.

In the second round tender for 20 shale gas blocks last year, most of the winning bidders were not traditional oil and gas companies and only two of them were private companies. Any independent domestic legal entity or Sino-foreign equity joint venture (in which a Chinese party holds majority of shares) with at least RMB 300 million of registered capital could participate in the tender. Bidders had to have some experience in oil or gas exploration or partner with someone who does. Winning bidders in the second round tender committed to spend at least RMB 12.8 billion on exploration in the first three years.

No foreign investors (through Sino-foreign joint ventures)



were selected in the past two rounds. None of the winners seems have the technology required for exploration or development of shale gas, which is held mostly by foreign firms. The Chinese companies who won the bids will have to resort to cooperation with foreign firms in order to push the shale blocks into operation.

Some major international players are eager to share in the potential. ConocoPhillips joined hands with CNPC for an exploration study of shale gas potential in the Sichuan Basin. EU energy giant Total and US firm Carrizo are also seeking partners to enter into the Chinese market and propose either to provide technology or own the shale blocks. Regulatory barriers, institutional conflicts, foreign exchange risks, financial grants and connections to pipelines are still the big concerns of foreign investors.

### Renewable Energy

China is trying to increase the amount of renewable energy as a percentage of total energy consumption and help domestic wind turbine and solar panel manufacturers, some of whom are on the verge of bankruptcy, restore normal operations.

A worldwide glut of manufacturing capacity of solar panels and wind turbines, the anti-dumping and countervailing duties levied by the United States and the ongoing anti-dumping investigations by European Union are dragging Chinese firms in the sector into an abyss of losses.

Meanwhile, by 2015, domestic installed generating capacity in China from wind is expected to reach 100,000 megawatts, installed PV capacity is expected to reach 35,000 megawatts and installed biomass power capacity will reach 13,000 megawatts (of which 3,000 megawatts will come from urban household garbage).

China increased its target for domestic PV generating capacity from 21,000 to 35,000 megawatts on January 29, 2013, only six days after the new five-year plan was published on January 23. Estimates are that installed PV capacity will increase by 10,000 megawatts in 2013. The experts believe that the 35,000-megawatt target is conservative and that total installed PV capacity will reach more than 40,000 megawatts by 2015. Local governments may drive the additional installations.

In “three norths” (central northern China, northeast and northwest), China will accelerate the development of new wind farms. However, overall attention will shift from onshore wind to offshore wind. The wind power bases / continued page 30

tax credit. The fund was allocated the tax credit and receives preferred cash distributions that are a percentage of its “paid-in” capital contributions. The IRS said debt service on the loan to finance the renovations, the various fees and the lease rents are set at a level that should vacuum up all the remaining cash flow.

Historic tax credits are subject to recapture for five years. The fund has a “put” option to force the partnership or developer to repurchase the fund’s interest at the end of year five for a percentage of the paid-in capital it contributed plus any unpaid preferred cash distributions. The developer has a “call” option to buy out the fund for fair market value, defined in a manner the IRS said will make it close to nil, plus any unpaid preferred cash distributions, after the exercise period for the put expires.

The developer and three of the individuals who own it guaranteed not only the refund if the tax credit was denied or recaptured but also payment of the put price. They also guaranteed all other obligations of the partnership, including excess development and operating costs and the rent owed on the lease.

The developer hired a promoter who was in the business of syndicating historic tax credits to organize the fund. The computer model the syndicator drew up indicated that the fund investors would pay 90¢ per dollar of tax credit and receive an X% priority return plus an additional Y% return on their investment at the end of the tax credit recapture period. A document describing the structure indicated that the transaction would be structured so that the fund would not receive any cash above the priority return.

The IRS said no real partnership was formed. All the benefits and burdens of the project remained with the developer “through a circular flow of contracts,” with the result that nothing in substance changed. The project remained the developer’s project with a side deal to transfer tax credits. The fund did not put any real capital in until after the rehabilitation job was completed.

“The fund never / continued page 31

## China

*continued from page 29*

along the coasts in Shandong and Jiangsu will be built up. Another 79,000 megawatts of new wind capacity is expected to be installed between now and the end of 2015.

Installed conventional hydropower and pumped-storage hydropower will reach 260,000 megawatts and 30,000 megawatts respectively by 2015. China is facing both internal resistance as well as complaints from its neighbors to building massive new dams. There are issues about displacing people and debates about the potential for such projects to cause geological damage and to pollute the environment. Chinese neighbors, like India, have also expressed concerns.

China is planning to build another 27 nuclear power plants along coastal areas. In the immediate aftermath of the Fukushima Dai-Ichi plant meltdown in Japan in 2011, China suspended approval of construction permits for new nuclear power plants, but the moratorium was lifted last October. By 2015, Chinese installed nuclear generating capacity is expected to reach 40,000 megawatts, with 18,000 megawatts of new plants under construction. There are 16 nuclear power plants currently in operation in China. The Hong Yan He plant is the largest in northeastern China. The Shi Dao Wan nuclear power plant, currently under construction, will use fourth-generation technology and will become the biggest in all of China after it is completed.

## China is attempting to reduce total energy usage and “consumption intensity.”

### New Technologies

China is keenly interested in advanced technologies for using coal to generate electricity, including ultra-supercritical, cycle fluidized bed and high-efficiency water-saving technologies. The latest five-year plan calls for construction of another

300,000 megawatts of coal-fired power plants. Of that number, 70,000 megawatts will be combined heat-and-power projects and 50,000 megawatts will use low-Btu coal for fuel. China hopes to reach efficiencies of energy conversion of coal to gas, coal to liquids and coal to olefin of 56%, 42% and 40% respectively. It is expected to build another 30,000 megawatts of new gas-fired power plants. Some old coal-fired power plants will be converted to run on gas. The gas turbines manufacturers, such as Dong Fang Electric (China), General Electric and Siemens, will have opportunities for growth in China.

CNPC, Sinopec and CNOOC will have to upgrade their crude oil refineries. All three were criticized by the public after fog and haze attacked middle and eastern areas of China repeatedly over the winter. The poisonous PM2.5, which comes partly from auto emissions, is considered the prime culprit. They have been lobbying the governments to defer deadlines for upgrading refineries to meet lower emission standards. By 2015, Chinese crude oil processing capability will reach 620 million tons and refined oil product output will reach 330 million tons. Energy consumption to process one ton of crude oil will drop to 63 kg of standard oil and water consumption of 0.5 tons. Chinese consumers are expected to face rising costs for moving to cleaner fuels in the future.

### Distributed Energy

Distributed energy should be the next hot area. China is expected to accelerate construction of natural gas lines to load centers. Coal-bed methane and shale gas projects that are small scale or not connected to pipelines have no choice but to find a local purchaser for the gas. By 2015, around 1,000 distributed gas energy projects will have been completed.

Rooftop solar installations are also taking hold and are expected to reach 10,000 megawatts by 2015.

Energy supply infrastructure required to support electric cars is being built in model cities like Beijing, Shanghai and Chongqing. By 2015, charging stations for electric vehicles should support as many as 500,000 electric vehicles. China is actively encouraging research and development of high-quality batteries and other forms of

## IN OTHER NEWS

energy storage. Wanxiang, a Chinese company, just completed the acquisition of US battery maker A123. Fisker Automotive, a US green car manufacturer that was up for sale, attracted only two bidders, Geely and Dongfeng Motor, both of which are Chinese, with additional interest shown by three other Chinese companies: BAIC Group, China Grand Auto and Wangxiang. (The company may be headed for bankruptcy.) One can feel the thirst of Chinese companies in this field.

China will remain a significant importer of oil and gas. It plans to accelerate construction of oil and gas pipelines between China and Kazakhstan, central Asia, Russia and Burma. These cross-border pipelines will have to be connected to other pipelines within China for domestic distribution. By 2015, 8,400 kilometers new oil pipelines, 210,000 kilometers of oil product pipelines and 44,000 kilometers of gas pipelines will be built. The oil product transportation capability will increase by 190 million tons.

The second phase of the China-Kazakhstan oil pipeline will be completed in November 2013. Two new gas pipelines between China and central Asia (Turkmenistan, Uzbekistan and Kazakhstan) with capacity to import 45 billion cubic meters of gas into China were completed at the end of 2012. A third gas pipeline to the region is expected to be complete by the end of 2013. A fourth line is under discussion between CNPC and counterparties in other countries.

Capacity on the existing China-Russia oil pipeline will be expanded, as agreed in meetings between Wang Qishan, the Chinese vice premier, and Igor Sechin, the president of Rosneft, on February 17 and 19, and Arkady Dvorkovich, the deputy prime minister of Russia, on February 25 in Beijing. Rosneft is seeking US\$30 billion, which is called "loan for oil," from China in order to complete its takeover of TNK-BP from BP. A gas pipeline between China and Russia is also under discussion between the two governments, with the focus on the pricing, and is expected to be in operation in 2015. Russia will supply 38 billion cubic meters of gas each year to China via the east gas pipeline. Energy cooperation between China and Russia is expected to increase.

Oil and gas pipelines between China and Burma started construction in 2010. The gas pipeline is expected to be in operation in June this year and the oil pipeline will be completed in 2014. Once the pipelines are operating, oil shipped from the Middle East will no longer have to cross the Strait of Malacca and can be discharged at the port of Kyaukpyu and transported to China via pipeline, which will save / continued page 32

*intended to participate in the rehabilitation of the historic property," the IRS said. "It simply wanted the historic tax credits. If it was not allowed the credits it wanted its money back . . . . [T]he rehabilitation and operations took place as if no transfer to the [partnership] had occurred."*

#### A TRANSACTION LACKED ECONOMIC SUBSTANCE, the US Tax Court said.

The Bank of New York borrowed \$1.5 billion from Barclays at LIBOR plus 20 basis points in late 2001. The Bank of New York booked the loan through a subsidiary in the Cayman Islands. However, the loan was set up as a transaction run on paper through a trust in the United Kingdom with an elaborate series of agreements a number of which involved circled cash. The main reason for interposing the trust and for some of the arrangements surrounding the trust was to trigger taxes in the United Kingdom on collateral held in a Delaware limited liability company that was a subsidiary of the trust over the term of the loan, which was expected to run through 2006, but to allow the Bank of New York to claim foreign tax credits for them in the United States. Barclays received tax benefits from the arrangement in the United Kingdom and shared half the benefit with the Bank of New York in the form of a reduced interest rate on the loan. The Bank of New York indemnified Barclays against the potential loss of half the UK tax benefits. Absent the tax benefits, the interest rate on the loan would have been LIBOR plus 30 basis points.

KPMG and the Barclays tax department pitched the transaction to the Bank of New York and other banks. They called the structure a "structured trust advantaged repackaged securities" transaction, or STARS for short.

The US Tax Court declined to evaluate the transaction as a whole as a loan with a legitimate business purpose for borrowing at a reduced interest rate, and instead looked at the efforts to generate foreign tax credits for use in the United States as a separate transaction. / continued page 33

## China

*continued from page 31*

time and money and alleviate concerns about safety of ship travel through the Strait. The ethnic war in Burma could affect the timetable. The project has also attracted environmental critics.

### Deepening International Cooperation

China encourages its enterprises to “go outside” to secure more energy supplies.

Chinese companies will participate in the overseas oil and gas exploration and actively cooperate with foreign partners in the refining, storage and transportation sectors. The major firms are supported by the government in their efforts to develop coal resources overseas. The expectation is that development of fossil fuel reserves will create demand for exports of equipment and engineering services from China. The most recent example is CNOOC, the biggest offshore oil developer in China, received approval in mid-February from CFIUS, a US government inter-agency panel that reviews proposed acquisitions for national security concerns, for a \$15.1 billion acquisition of Nexen, and the deal closed in late February. Sinopec, the largest oil refiner in Asia, signed an agreement with Chesapeake, the second-largest gas producer in the United States, to acquire Chesapeake’s stake in the Mississippi Lime oil and gas properties in Oklahoma for \$1.02 billion.

The International Energy Agency predicts that China’s state-owned oil enterprises will produce three million barrels a day abroad in 2015, double their 2011 overseas output of 1.5 million barrels a day and equal to Kuwait’s total annual oil output.

Moving to renewable energy, Chinese enterprises may be more active in cross-border acquisitions. This is one way to acquire new technologies. For example, Hanergy, China’s largest private clean energy company, acquired MiaSolé, a US solar energy company, in January in order to acquire copper indium gallium selenide technology for making solar panels.

Meanwhile, China welcomes foreign investors who want to participate in the exploration of complex onshore oil and gas fields as well as deep-sea oil and gas fields in China.

Maintaining good relations with the current foreign oil and gas suppliers is as important to China as prospecting for new supplies. The oil trade volume is expected to increase to support economic growth at home.

More transparency, clarification and certainty are required by

the market. The new five-year plan sets targets for China as a whole. Each sector of the energy industry and province has its own sub-plan. The relevant departments under the State Council, such as the NDRC, NEA, Ministry of Finance, Ministry of Land and Resource and MOFCOM, will draft implementing rules based on the plan. China still faces conflicts between economic growth and caps on energy production and consumption, but such tensions are no different than in any other country. ☺

## The US Distributed Solar Market

*A group of solar rooftop industry executives had a wide-ranging discussion at the PV America convention in Philadelphia in February about the basic business models in use in the US market, customer default rates, investor returns, barriers to entry, emerging new financing strategies and other issues. The panelists are Ben Cook, vice president of structured finance at SolarCity, Kristian Hanelt, senior vice president of renewable capital markets at Clean Power Finance, Laura Stern, president of Nautilus Solar Energy, Sandy Roskes, vice president for sales at Astrum Solar, and Song Yi, chief financial officer of Standard Solar. The moderator is Keith Martin with Chadbourne in Washington.*

MR. MARTIN: What is your basic business proposition for residential customers?

MR. ROSKES: We offer flexible options that meet customers’ needs with market-based pricing, but with a high-quality experience from the time of initial contact through to interconnection.

MR. MARTIN: I have heard Lyndon Rive, CEO of SolarCity, say that his basic proposition is a customer can have solar panels on his roof for free and draw electricity for monthly payments that are roughly 85% of what he is paying the local utility. Is your basic proposition the same?

MR. ROSKES: Absolutely. Most people want to go solar for free and save money immediately. We spend a lot of time trying to figure out what their true needs are and what best fits their goals. Fifteen percent off your bill for no money out of pocket is a good benchmark. Depending on what state you are in, and what the particulars are, you might even do better than that.

MR. COOK: We introduced the solar lease in 2008 and, since then, have been offering customers, at no money down, a save-

## IN OTHER NEWS

money-month-one proposition. People are already paying a utility for electricity on a per-kilowatt-hour basis. Rather than try to sell them a lot of equipment and require a huge upfront payment, we allow them to go solar in the same way they are already used to buying electricity.

The proposition is the same for both residential and commercial customers. Customers want to save money. The most important green to many customers is the dollars that remain in their pockets.

MR. MARTIN: Laura Stern, you focus solely on the commercial and industrial market. Is your offer to customers the same?

MS. STERN: We have two different models. One model is a power contract with the customer paying for electricity at a discount to local retail rates. The other model is for markets with feed-in tariffs where we pay customers for the right to have our solar panels on their roofs, and we sell the electricity to the local utility to earn the feed-in tariff.

MR. YI: We have both commercial and residential customers. For residential customers, we offer four different products. We offer solar panels, energy efficiency, traditional generators and smart homes.

Energy efficiency provides probably the greatest value. For about \$3,000, a customer can save close to 15% to 20% on his energy bill. The savings add up rapidly. It is basically new insulation, windows and changing out light bulbs to LED light bulbs. We give the customer a picture that shows where he is leaking energy and what to do.

MR. MARTIN: What percentage of your business is energy efficiency as opposed to pure solar?

MR. YI: Probably 20%. It is a low-ticket, high-volume business. A lot of the utilities like Baltimore Gas & Electric and Pepco provide energy audits for free. We receive about \$200 to \$300 from the utility when we audit. Where we make money is in retrofits.

MR. COOK: We offer the same service and are seeing growing demand among customers for it. As Song Yi said, once you go solar, all of a sudden you have a much better understanding of how much electricity you are using. After we install a solar system, or sometimes even where we have not installed the solar system, we will offer a home energy evaluation and build a full energy model of the house. We determine every aspect of how the home is using energy and offer solutions. There are a number of things that the typical customer can do to lower energy costs. This is still a very small part of our business, but it is growing quickly.

MR. MARTIN: Kristian Hanelt, you work with various solar companies. Do you see most of them / continued page 32

That separate transaction had no business purpose, the court said.

Even if the transaction were reviewed as an integrated whole, the court said, the loan was not low cost because the high transaction costs plus the interest paid exceeded the cost of borrowing from Barclays directly.

The court declined to let Bank of New York claim foreign tax credits for any UK taxes it actually paid. It said Congress authorized such credits to neutralize US taxes as a factor in deciding where to conduct real business activities. There was no real foreign activity here, but rather a pre-arranged circular cash flow from collateral held, controlled and managed in the United States. The Bank of New York contributed the \$7.86 billion in assets to the trust and the Delaware limited liability company that was a subsidiary of the trust that served as the collateral for the loan and provided cash flow with which to repay the loan.

*The case is Bank of New York Mellon Corp. v. Commissioner. The court released its decision in the case in February. B. John Williams, a former IRS chief counsel, argued the case for the bank.*

**PARTNER GUARANTEES** may face greater scrutiny.

A partner sometimes guarantees debts at the partnership level in order to have the debt be added to the "outside basis" the partner has in his partnership interest. IRS rules require that each partner track two measures of what he put into the partnership and what he is allowed to take out: capital account and outside basis. A partner's outside basis is the equity he invested plus his share of debt at the partnership level. Any debt for which the partner is personally liable is added to that partner's outside basis. Otherwise the debt is allocated among partners according to complicated rules. By guaranteeing repayment of partnership debt, a partner might give himself a higher outside basis and, therefore, ability to absorb tax benefits.

Jennifer Alexander, an / continued page 35



## Distributed Solar

*continued from page 33*

coalescing around a single business model and, if so, what is it?

MR. HANELT: Most offer 85% of what the customer is paying the local utility, plus or minus 10%. Some companies are very successful at just selling solar at a very slight savings, but what they are selling is getting off the utility.

MR. MARTIN: For those of you who start at a percentage of the monthly utility bill, do you adjust the payments over time for inflation and, if so, what is the inflation adjustment? Or do you adjust the monthly customer payment by looking periodically at the utility bill and always trying to stay below it?

MR. HANELT: Our installers work with homeowners to find the right inflation adjustment that the homeowner wants. It could be zero or it could be up to a 3% annual escalator.

MR. ROSKES: We offer a similar range. We offer the same fixed payment for the full term of the contract or we can start with a lower initial payment and adjust for inflation.

### Lease Versus PPA

MR. MARTIN: Laura Stern, you told me Nautilus has had systems in operation since 2007. Ben Cook, what is the oldest system SolarCity has in operation?

MR. COOK: We started installing systems in 2006 and offered our first “zero-down” solar lease in early 2008.

MR. ROSKES: We started installing in 2008. Our first finance product was in 2010.

MR. YI: We have been installing solar since 2006, but we started offering financing products like a lease or PPA to homeowners in 2011.

MR. HANELT: Clean Power Finance was founded in 2006, but did not start financing until 2011.

MR. MARTIN: Some companies offer to sell customers electricity under long-term power contracts or PPAs, some offer to lease solar systems to customers, and Laura Stern has a completely different model where she is leasing space on a roof and selling electricity to the local utility. Is the power contract or lease always 20 years? Why choose to sell customers electricity rather than lease them systems, or vice versa?

MR. HANELT: We offer leases, PPAs and loans. We work with installers. The idea is to give them all of the tools they need to make the sale. We offer leases of up to 25 years and PPAs of up to 20 years. Certain installers prefer one over the other. Homeowners sometimes choose a lease because maybe they

lease a car and a PPA is a little foreign. The two products are really very similar; there are slight differences in who bears the risks and the rewards of production.

MR. YI: We offer both a PPA and a lease in substance, but we call them both PPAs. The difference is that the customer pays a per-kilowatt-hour charge for electricity under a PPA and the customer pays a set monthly fee, regardless of consumption, under a lease. We use third-party financing. For some reason, the financiers do not want the product to be called a lease, so we call both PPAs.

MS. STERN: All of our projects are under PPAs, but some are with the host customer whose property we are on and some are with the local utility. We do not pass off any risk of production, installation or operation to our customers. They just buy kilowatt hours.

MR. COOK: We offer both leases and PPAs. Some states do not allow PPAs and so we offer leases, but more and more, we do PPAs where they are allowed because the value proposition is simpler. If you are spending X cents per kilowatt hour and we can offer you something less than that, why wouldn't we do it? We now are in more than 500 Home Depot stores across the country, and people come in to buy dirt, a ladder or a hose and they walk out having signed up for 20 years of electricity.

The states where we cannot offer PPAs are those that do not allow retail sales. The local utility has a monopoly on that. An example is Arizona.

MR. MARTIN: Sandy Roskes, you are head of national sales for Astrum Solar. Which do you find easier to sell: a PPA or a lease?

MR. ROSKES: We have used both and still have a mix, but I have a different point of view. I think leases are more attractive to customers for the simple reason that we can tell them what their monthly payments are going to be forever.

### Customer Default Rates

MR. MARTIN: What are customer default rates?

MR. ROSKES: They are about as close to zero as you can get.

MR. COOK: The simplest way to think about default risk is that utility payments are the operating payments for a household. Operating costs are generally paid first regardless of assets. People pay for electricity. We have installed more than 30,000 systems to date and have had very few defaults.

Unlike financing a restaurant where, if the investment does not pan out, you have lost your money, with solar, especially residential, it is not a question of risk of loss but a question of

## IN OTHER NEWS

cash flow interruption. Folks who have decided not to pay for electricity are generally not going to be in the home very long. What you really have is a question of how long until the foreclosure and until there is a new tenant in that house.

MR. MARTIN: There was a fear in California, Nevada and some other states where homeowners were under water on their mortgages that the homeowners might abandon their houses. How real did that fear prove?

MR. COOK: We were a great test case because we started offering solar leases in 2008 before the crash. We found that, despite all these fears about mortgages being under water, people continued to pay for electricity. We have had quite a few lease transfers. Some of the companies on this panel offer 25-year PPAs or leases, and the average person stays in his home for six years, so we should expect to see lots of transfers as houses change hands. We have a full-time department that does nothing but help transfer solar contracts from one customer to another, but defaults have been exceptionally low.

MS. STERN: We have customers that range from nonprofits to utilities. The only hiccup we have had was with an investment-grade utility.

MR. MARTIN: What minimum FICO scores do you insist on for residential customers?

MR. YI: Our customers must have FICO scores of 700 or higher.

MR. COOK: We require 680, but as the industry matures, solar will be offered to lower and lower FICO score customers. The fact is that people pay for electricity. Much like the mortgage industry where you do not have a cut-off where, if you are above a certain FICO score, everybody can get financing for a house and, below that, it is "I'm sorry, you just can't qualify for a mortgage," I think you will start to see more and more differentiation.

MR. MARTIN: Kristian Hanelt, what is your minimum FICO score?

MR. HANELT: We have five funds under management that all have unique credit requirements. The FICO score minimum of the lowest fund is roughly 660. The fund looks at other things in addition to FICO. We also have a super prime product that has an average FICO in the 780s. We try to place products along the credit curve. A fund with 700 FICO customers should get a worse price than a fund with 780 FICO customers.

MR. ROSKES: Our minimum has been around 700. The market is creeping down to 680, but I concur with everybody here. You are going to end up with different / continued page 36

attorney in the office of tax policy at the US Treasury, told an American Bar Association tax section audience in late January that the partner must have a net worth at least equal to the guarantee in order for the guarantee to be respected. In addition, there must be a commercial reason for the guarantee. A guarantee will not be respected if put in place solely for tax reasons.

**OPTIONS** to purchase partnership interests may have tax consequences, the IRS said.

The agency explained the tax consequences of "noncompensatory" options in final regulations in February. Regulations on "compensatory" options that are given as compensation for providing services will probably not follow until Congress addresses the tax treatment of carried interests that managers hold in private equity funds.

The regulations address options issued directly by the partnership and that give the holder a right to buy an interest in the partnership (or to receive cash or property having an equivalent value). Debt that can be converted into a partnership interest is also considered such an option.

In general, no income tax is triggered when such an option is granted or exercised.

However, someone contributing appreciated or depreciated property for an option will have a gain or loss on the difference in value between the option and his basis in the contributed property.

Letting an option lapse without exercising it will have tax consequences. In that case, the holder of the option can claim a loss for whatever he paid for the option. The partnership must report the original payment for the option as income at that time. (It did not have to be reported as income earlier because it was viewed as part of an "open transaction.")

The capital accounts of the existing partners may be reset, if the partners choose when the option is granted, so that they add up to the current fair market value / continued page 37

## Distributed Solar

*continued from page 35*

thresholds that bring different cost financing. You will end up with a sliding scale much like mortgages. The default rate will remain low because the customer's alternative is to pay more for electricity from the local utility.

**A few national brands are emerging among solar rooftop companies while middle-market companies are expected either to exit or consolidate.**

### Biggest Challenge

MR. MARTIN: If customer defaults are not a problem, then what is the most common customer problem?

MR. COOK: Education. Solar has spread on the back of a very basic value proposition — “save money month one, no money down” — which is why the third-party ownership business model has prospered. Where five years ago, a very small percentage of the systems used this model, now in many markets it is well over 80% or 90%.

MR. MARTIN: So the biggest problem is the effort it takes to acquire customers. What is the most common problem once you have customers?

MR. COOK: The most common problem once you have the customers is the logistics of keeping thousands and thousands of customers happy and making sure that everybody has a good customer experience. It is one thing to have 10 or 100 customers where you can think about each individually. When you are dealing with thousands of customers across thousands of jurisdictions for building permits and interconnection standards, it becomes very challenging to keep the customer wait times low and the administration reasonable. It is one of the things that SolarCity has done very well.

MR. HANELT: We started with a broadband-based approach to monitoring, but it was surprising how many households do not have a reliable internet connection, so we moved to cellular monitoring. Homeowners would promise to keep internet

service, but a significant amount of the portfolio may not be getting a signal at any given time.

MR. MARTIN: So they pay their electricity bills, but maybe not their internet provider bills.

MR. YI: We are more of an installer, and probably 60% of our installs are cash deals and 40% are financing through a third party. For financed systems, we offer O&M service after installation. If the system goes down, we go out to repair and put the system back in service. For both types of systems, once we install, we collect cash and, from our perspective, ours is a cash-and-walk-away deal. So we have basically a zero default rate. We collect every cent that we install.

MR. MARTIN: Some people have suggested that asking customers to sign a 20-year contract is like asking them to sign up for a lifetime of electricity. They suggest solar companies need to move toward a cell phone-type model where the customer can switch providers with a month's notice. Do you think this is the direction in which the industry will eventually move?

MS. STERN: It does not work for commercial and industrial projects. We have a large number of rooftop systems, but we also have ground-mounted projects and parking canopies. These are very large, capital-intensive investments that really are not intended to be transported and moved. There is currently no secondary market for these projects. As of today, they are intended to have 30-year lives.

MR. MARTIN: People lease cars that cost as much as a solar system from General Electric Capital Corporation or the local bank, but it is for a short time period. Why should solar be different?

MS. STERN: The difference is that you can buy a previously leased car on a secondary market from a dealership and have a great warranty and be perfectly happy with that car. Someone else can drive it after your four years are up. You cannot move a parking canopy efficiently. You can recover the solar panels, but they are becoming an increasingly smaller part of the capital cost of the project.

MR. COOK: With the cost of PV modules declining, a greater and greater percentage of the cost of a solar asset becomes the labor associated with installation or de-installation. The real dif-

## IN OTHER NEWS

ference between the auto market and the solar market is solar does not have wheels. You cannot move it so easily to another place when the value of the equipment is really the ability to produce electricity at a particular location and when the labor content is so high.

MR. HANELT: I think that some of the community solar initiatives that people have been trying to get underway in California and other states are an attempt to provide a transferable service where you can do that. You basically are buying solar electricity from a centralized location under a shorter-term contract.

MR. ROSKES: The key is to have agreements that contemplate any potential outcome. There is really no outcome where the customer will not need electricity, but the customer may move, pass away or sell the house. The key is to provide answers to all of those potential outcomes. A customer who is unwilling to commit to 20 years of service may prefer to purchase the system. It may make financial sense to do so. Our mix is much more weighted toward leases than purchases today because a lease is such a great financial option, but it is not the only option. Transferring a leased system to a new homeowner has to be easy. You have to build the transfer agreement into the original contract. Moving a system is probably the least beneficial outcome for all; however, it is an option that we offer. If you spell out all the potential options in the customer agreement, then the fear of entering into a 20-year agreement is diminished.

### Basic Economics

MR. MARTIN: Some have suggested that the cost to acquire the customer is about 50% of the cost of an installed solar system. The equipment is about 25%, and the cost of capital is about 25%. Do those numbers sound right?

MR. YI: For Standard Solar, the customer acquisition cost is much lower, easily below 20%.

MR. HANELT: We see a lot of different business models, but from what I can piece together, good originators will originate for \$2,500 per solar system per customer, while best-in-class folks are claiming they can get into the \$1,000 range or even below that. There are a lot of different models for originating customers — be it call centers or door-to-door sales or anything else — and it is a big part of the cost and often greater than the cost of the modules, depending on the installer.

MR. MARTIN: I think when people say 50% cost to acquire the customer, they are talking about / continued page 38

of the partnership assets after adjusting for the option. If the option is “in the money” so that it is worth more than the option holder paid for it, then the capital accounts of existing partners would be reduced. If the holder paid more for the option than it is worth, then the capital accounts would be increased. However, once the option is exercised, the capital accounts must be reset to reflect the claim that each partner has over partnership assets should the partnership liquidate. Certain “corrective allocations” will also have to be made when the option is exercised. These are allocations of gross income or loss to help put the capital accounts in the right ratio.

Careful tax counsel will want to keep an eye on options when assessing whether a partnership has terminated for tax purposes. That’s because the IRS may treat an option holder as already a partner if he has rights that are “substantially similar to the rights afforded to a partner.” He has such rights if the option is reasonably certain to be exercised or the option holder possesses partner attributes. Options to purchase for fair market value at time of exercise or that must be exercised within 24 months at a strike price that is at least 110% of the value of the underlying partnership interest are not considered reasonably certain to be exercised. An example of where the option holder already has partner rights might be where he already has some voting rights and cash distributions to him after exercise will give him a share in the economic returns during the period the option was outstanding. A partnership will terminate for tax purposes if 50% or more of the interests in partnership profits and capital are transferred within a 12-month period.

However, the IRS will take the position that an option holder is already a partner only if there is a “strong likelihood” that failure to treat him immediately as a partner will lead to a substantial reduction in the aggregate tax liabilities of the option holder and existing partners.

*Options must be retested for whether the option holder has rights substantially similar to a partner on / continued page 39*

## Distributed Solar

*continued from page 37*

the allocated cost of the web site, the call center and the salesmen out calling on potential customers. Let me switch topics to the operating phase. You have a high capital cost to install, but once you get into the operating phase, isn't it like an alarm business where you collect a monthly fee without having to do much for it? How expensive is it actually to monitor and repair?

MR. COOK: Yes. The fact that you have no fuel costs and no moving parts means that in the grand scheme of things, the operating costs of a solar project should be very low. Typically the kinds of things that you need to worry about are monitoring and then the need to fix things when a system malfunctions. You also need to make sure that you are providing reporting to the customer or to investor partners on a periodic basis.

MR. MARTIN: What are costs as a percentage of revenue once you get into the operating phase?

MR. ROSKES: The percentage is very low. Solar panels are a steady state product; they do not break. Communication with the customer is key. The customer gets monitoring. He gets alerts.

The beauty of a 20-year agreement is you are on the roof for 20 years. It is terrific that you have these opportunities on a monthly basis to communicate with your customers, potentially to provide them other services or to solicit referrals. The key is about turning that into an opportunity.

MR. MARTIN: You have high installation costs. Once you get into the operating phase, you have very low costs and, presumably, that is a very good part of the business to be in. Has anybody in this market turned a profit yet?

MR. YI: We have been turning profit for the past two years. We have a lot of direct sales, but the O&M business is also taking off. We have a lot of systems in, and we are also accumulating a lot of O&M contracts from different developers who do not have that capability.

MR. COOK: I cannot comment on profitability since we are now a public company. Speaking more generally on behalf of the industry, I think it is important to distinguish between profitability and positive cash flow. For the third party ownership model, where there is substantial ongoing involvement, you do not get sale treatment upon installation of the system. You amortize the gain from installation over the term of the customer agreement. It is important when looking at companies with this business model to look beyond GAAP profitability and

focus on cash flow. If you are growing quickly and gain on installation is spread over the term of the customer agreement and all of the operating costs associated with customer acquisition and everything else are expensed, then it is going to be a very difficult GAAP presentation. Looking at cash flow is a much more meaningful metric.

MR. MARTIN: What returns are you promising investors who invest in your companies?

MR. HANELT: Our funds have the ability to set their own return thresholds, but we have seen the returns drop quite substantially in residential since the year and a half we have been in the business. They have definitely come down from two digits to one digit.

MR. MARTIN: These are returns for the developer or the third-party investors?

MR. HANELT: The returns for the investors. Our model is different because we are not a sponsor. We do not take long-term ownership of the asset, so we do not have the same kind of issues that the other companies may have. GAAP explains our business just fine. Our investors own 100% of the assets and use 100% of the cash and tax benefits, so our return is an unlevered after-tax weighted average cost of capital for the whole financing product that we sell.

MR. MARTIN: This is a market that has had low barriers to entry. A lot of roofing companies act as installers. Are we at a stage in the industry life cycle where there are still a lot of new entrants or are we starting to see some consolidation?

MR. COOK: There are low barriers to entry for companies that do relatively small volumes. If you are a small roofer or a small installer of some other type of product, then maybe it is not so hard to expand into solar. If you want to build the infrastructure that Sandy Roskes described, then it is a very high barrier to entry. The barriers will become even greater as customers become more demanding about post-installation service.

MR. ROSKES: The market is bifurcating. There are very low barriers to entry at the low end of the market. There is nothing to prevent a roofer or an electrician from installing solar. There are no national roofers or electricians. However, there are emerging national solar brands. What we are seeing is that there is a consolidation in the middle with people exiting the market or consolidating. You either get big or stay very small — that is the bottom line — because of the advantages of scale in things like customer acquisition, customer care, information and communication. These are areas where the benefits of scale are enormous. You will continue to see a hollowing out of



the middle. There will be plenty of roofers and electricians installing one or two systems a month, and a very small number of large players that are regional or national in scope.

### Financing Strategies

MR. MARTIN: Homeowners who purchase systems qualify for a 30% residential tax credit. Where the solar company retains ownership, it qualifies for a 30% investment tax credit and five-year depreciation that is equivalent to an additional 26% tax credit in terms of additional tax savings over time. Is tax equity the main way of financing — trying to get value for these tax subsidies that the solar company has too little tax capacity to use directly?

MR. COOK: Tax equity is essential unless you are part of a parent company that has unlimited tax capacity. Basic math requires that you monetize that tax equity externally. However, tax equity is not the only part of the equation. One of the essential ways to lower the cost of capital and be able to enter more and more solar markets will be the ability to monetize the cash flows from the system independently of the tax equity.

MR. MARTIN: Do you foresee people combining securitizations and tax equity?

MR. COOK: I would frame it more broadly as debt. Securitization is a form of debt and one that is naturally suited for large bundles of diversified customer credits, but more generally, debt is something that looks to a fixed series of payments over a long period of time in exchange for up-front capital. Debt and tax equity can coexist. As solar becomes a more mature asset class, we are seeing more and more lenders who are comfortable with the risks associated with solar projects.

MR. MARTIN: Laura Stern, you told me before this session started that you are now looking for strategic investors. What is the challenge with tax equity?

MS. STERN: Tax equity is required. It is essential to have an owner who has tax appetite and who is going to monetize the tax benefits efficiently. Tax equity is challenging in the commercial rooftop market because you don't have the same deal flow as in the residential sector. The challenge is bundling enough projects and having investors come in before the projects are put in service and to execute efficiently with reasonable transaction costs.

MR. MARTIN: How large a portfolio do you think somebody needs in order to be able to raise tax equity, and what do you think current rates are for tax equity? How much does it cost?

MR. HANELT: We have done residential / continued page 40

## IN OTHER NEWS

*each date an option is issued, transferred or modified. However, only some transfers and modifications trigger retesting.*

**THE US FOREIGN CORRUPT PRACTICES ACT** applies to three Hungarian executives of Magyar Telekom PLC, a federal district court judge in New York ruled in February.

The executives are accused of paying bribes to Macedonian officials to limit a law allowing a competitor into the Macedonian market. American depositary receipts in Magyar Telekom trade on the New York Stock Exchange. The executives were accused by the US Securities and Exchange Commission of misleading US investors when they certified to the company's auditors that the company's financial statements were complete and accurate and they were not aware of any violations of law. The certifications were later filed with the SEC.

The executives moved to dismiss the case on grounds that the US courts have no jurisdiction over the alleged crime since it took place in Macedonia by foreign nationals and it occurred more than five years ago. The US judge declined to dismiss. He said the statute of limitations on such crimes does not run while the perpetrators are outside the United States. The case is *SEC v. Straub*.

*The same court said it had no jurisdiction over a German citizen working for Siemens who allegedly encouraged others to bribe Argentine government officials. The particular Siemens employee was not involved himself in paying or authorizing the bribes or in any false filings with the SEC. The second case is SEC v. Sharef.*

**INITIAL PROPERTY TAX ASSESSMENTS** can be capped for wind farms at 33% of installed costs and for solar projects at 12.5% of installed costs, the Tennessee state attorney general said.

He said such a cap does not violate a requirement in the state constitution that "[t]he ratio of assessment to value of / continued page 41

## Distributed Solar

*continued from page 39*

funds as small as \$25 million. We have gotten pretty good at making them easy to close. As far as rates go, we have seen as low as 7% after-tax unlevered and as high as something that is not even really meaningful, but in the upper teens.

MR. MARTIN: Where do you think rates are right now for a partnership flip transaction?

MR. HANELT: They are in the single-digit range for a solid developer working with a large tax equity investor who does a lot of deals. The expiration of the section 1603 program will raise the bar on what it takes to raise capital. If you can get over the bar, then tax equity rates are pretty good. If you cannot get over the bar, then you may not be able to find tax equity on any terms.

MS. STERN: One should also distinguish between the yield that a tax equity investor is getting versus the cost to the developer to implement it. There can be two tax equity investors in the same project; one gets a single digit return and one gets a double digit return because they have different residual value assumptions, and they have different tax rates. They are booking it differently. People tend to focus on what the yield to the investor is, but the way to look at it is, what does this investment cost me? What value am I getting out of it?

MR. MARTIN: What have you been paying for tax equity?

MS. STERN: It is not entirely visible. But a developer should focus on other things. What are your options? What does it cost to put the financing facility into place? Would you rather do it with one investor or another? Are you going to be able to raise tax equity at 1.3 times the investment tax credit value, 1.25x, 1.35x? These are the considerations you should be looking at as opposed to what is the yield to the investor.

MR. MARTIN: There are three main structures for tax equity: master sale-leasebacks, master partnership flips and master inverted leases. SolarCity does a lot of these. Which structure is preferred and why?

MR. COOK: We use all three structures, but we see mostly partnership flips and inverted leases. These structures make more sense for a company that hopes to own the asset long term. In an inverted lease, the asset comes back to the developer without the need to pay anything for it. In a partnership flip, the developer gets 95% of the asset back and has an option to repurchase the remaining 5%. In a sale-leaseback, if the developer wants to keep the asset at the end of the lease, he must pay full value for it.

MR. MARTIN: There has been a lot of talk about securitizations. The main impediments are a lack of default data — there are only a few years of data on customer default rates — the need for standardized contracts across the industry and the need for known service providers. On standardized contracts, if you look at the other securitization markets like student loans and home mortgages, they use form contracts. You cannot change a term. What progress is being made on securitizing customer receivables in the rooftop solar market?

MR. HANELT: There is a group called Solar Access to Public Capital that National Renewable Energy Laboratory is sponsoring in which SolarCity and Clean Power Finance and perhaps other solar companies are participating along with the rating agencies and other industry constituents. The group is focused at the moment on creating a standardized contract. NREL is also leading a charge to get all the major players to share anonymous and aggregated data around performance and default rates that should help rating agencies get comfortable. Progress is being made, but it is going to take a while before you have a truly liquid and fluid securitization market.

MR. MARTIN: How long? When do you think we will see the first securitization?

MR. HANELT: I think you will see the first one this year. If the tax credit is truly stepping down to 10% in 2017, then we need to have this mechanism in place by then because debt is going to be paramount.

**The cost of capital for residential solar is declining as financiers get more comfortable with the asset class.**

## IN OTHER NEWS

MR. MARTIN: Another potentially new form of financing that people have been talking about is real estate investment trusts or REITs. Have any of you been pushing in this direction? Do you see much promise?

MR. COOK: The purpose of these strategies — securitizations, REITs and other structures — is to monetize future cash flows. The same work that is being done to facilitate securitizations will have to be done for any type of debt. The most important thing we as an industry need to do now is to make sure that tax equity and debt can coexist. Then you can shop across different types of capital and find the most efficient one. But if you cannot separate the tax benefits from the cash, then all these structures are theoretical.

MR. MARTIN: Many people thought, going into this year, that the cost of capital would increase for renewable energy companies because the two cheapest sources of capital are disappearing: Treasury cash grants that cover 30% of the capital costs and Department of Energy loan guarantees. In fact, has the cost of capital been going up? Has it been stable? Is it coming down?

MS. STERN: We see it as actually going down modestly, both as a function of industry maturation as well as investors seeking yield.

MR. MARTIN: So the financial markets are deciding over time that the solar rooftop sector is not as risky as thought earlier. Ben Cook, you described your strategy to try to drive down the cost of capital by trying to combine securitizations, solar REITs and other forms of debt with tax equity. What about the others of you on this panel? Are there other strategies you are pursuing to push down the cost of capital?

MR. COOK: There are many new players coming into the market on both the tax equity and debt sides. This is part of a broader maturation of the industry. There are various pools of capital across the debt markets taking a hard look at rooftop solar for the first time as the scale of available projects increases, and it is all leading to a lower cost of capital.

MR. MARTIN: When you combine project-level debt with tax equity, the debt is ahead of the tax equity in terms of priority of repayment. However, the tax equity will want some forbearance by the lenders if there is a default. The tax equity investor claims investment tax credits. They will be recaptured if the lenders foreclose on the assets within the first five years. Do you think forbearance will require the lenders to agree not to foreclose on the assets for that full five-year recapture period?

MR. COOK: It is an interesting question. The industry is exploring a lot of different structures. / continued page 42

property in each class or subclass shall be equal and uniform throughout the State.” The caps would not bind assessors when the property is reassessed. They would also be consistent with a finding by the state legislature that wind and solar projects generate only a fraction of the electricity generated by a conventional power plant.

The state legislature is considered imposing the caps to encourage more use of renewable energy. The wind cap is already in effect. The state legislature is considering extending the concept to solar, geothermal and hydrogen energy. The initial caps for geothermal and hydrogen energy would be set by the state department of environment and conservation.

The state attorney general’s views are in Opinion No. 13-19. The opinion is dated March 11, 2013.

In February, the attorney general said in a separate opinion that it would not be constitutional for the state legislature to provide for a four-year phase in of higher property tax assessments when a business makes capital improvements. He said this was similar to an earlier proposal he concluded was unconstitutional to waive property taxes in a depressed part of Jackson, Tennessee in order to encourage new economic development.

*It is hard to use property taxes to achieve such goals given the equal assessment clause in the state constitution. The opinion on the four-year phase in is Opinion No. 13-11 and is dated February 13, 2013.*

**MINOR MEMOS:** The IRS is asserting more frequently on audit that US companies should receive fees from foreign affiliates for whom they guarantee repayment of debts or performance of contracts. The fee income must be reported on US tax returns. Such guarantees may also create complications for any US multinational using an offshore holding company to defer US taxes on foreign earnings until the earnings are repatriated to the United / continued page 43

## Distributed Solar

*continued from page 41*

Some of those involve having debt at the project level. Some involve having the debt behind as sort of a back-levered structure and then you will also see hybrid corporate asset finance types of structures. The forbearance issues will have to be worked out in cases where project-level debt is used.

### Growth

MR. MARTIN: We have seen very slow load growth in this country. We all work in a market in which demand for the product is not increasing rapidly. A lot of people think that distributed solar has the potential to soak up all of the load growth and yet, when I have asked CEOs of some of your companies about their ambitions, they do not seem to be so ambitious. What do you think is the potential for this industry? Will it soak up all the future load growth?

MR. ROSKES: It is a very good question. There are some great attractions to distributed generation, particularly with the poor state of the electricity grid. When you can start to employ micro grids, I think you get an ability to soak up a lot more of the load growth.

To me, the key is the underlying economics of these deals. If the improvements we are starting to see in the underlying economics remain on track, then obviously we as companies will thrive. The cost of capital will come down. More financiers will jump in. We will have a greater ability to soak up incremental demand. The section 1603 program is expiring. Eventually we will have the 30% investment tax credit drop to 10%. You will have state incentives disappearing. But on the other side, what is the retail price of power? Prices have been flat, but you do not read as much about transmission and distribution costs. They are bound to increase dramatically on the east coast. These are all factors in the ability of third-party owned distributed generation systems to soak up the incremental demand.

MR. MARTIN: How great a threat is distributed solar to the traditional independent power model? What are the ambitions for the rooftop solar industry?

MR. COOK: Distributed generation represents an important change in the way that electricity is produced and consumed. In the utility-scale model, you take tens of thousands or millions of solar modules and co-locate them in the desert to simulate what a natural gas power plant looks like. It is very different to try to take a natural gas power plant and divide it up into five-

kilowatt chunks and site a piece of it in everyone's backyard. The ability to produce electricity at the point of consumption has never truly been possible, and I think that will lead to a lot of macro questions about what should be the continuing role of utilities.

MR. MARTIN: *The Economist* magazine said 20 years ago that we will soon see our last central station power plant built. It thought we were moving to a hydrogen economy. Everybody would have a small refrigerator-sized fuel cell in his basement. Are we reaching a tipping point with distributed solar?

MS. STERN: Distributed solar is becoming much more important. The utilities initially felt it was easy to ignore. Now that the numbers are becoming bigger and the distributed producers are taking a lot of not only of future load growth, but also the existing customer base, the utilities must decide either to support the distributed solar model or to try to block further expansion. A blocking strategy is not very palatable, so we are seeing utilities adopting and really supporting distributed solar. They want to do it in a way that gives them more visibility into the growth profile of the industry, which is why we are seeing more utilities come out with feed-in tariff programs.

MR. MARTIN: What is the attraction to a utility of a feed-in tariff? Isn't it just cannibalizing its rate base?

MS. STERN: They are also facing a lot of uncertainty and potential instability with the distributed generation model. They may be investing a lot of money in transmission without necessarily knowing when a load pocket will turn around because of unanticipated adoption of distributed solar. The effects are potentially broader. Feed-in tariffs provide the utilities with a hedge and affect their willingness to get into the market themselves as purchasers of power.

MR. MARTIN: Song Yi, somebody said there are 44 million rooftops in the US. Solar rooftop is a little like the early days of the cable television business where you are wiring up more and more houses. Is that the way you see the rooftop market?

MR. YI: This past year, electricity prices remained flat because of low natural gas prices. When electricity prices increase, more people will see the value of distributed solar and the rate of growth will pick up.

MR. HANELT: There is a great opportunity. We closed our last investment fund with a utility holding company. There is a big opportunity for it to expand the number of customers to whom it sells electricity. It knows something about owning power plants. For us, it is a great investor and lessor of solar equipment while it learns the business.

MR. COOK: From a utility perspective, you can look at it as a threat or you can look at it as an opportunity. Investing in distributed solar allows a utility to expand outside its service territory. Rather than talk about cannibalization, you could look at it as a potential expansion. I think we will see more utilities that see this as more of an opportunity than a threat to enter the market. ☺

## Keys To Getting California Power Contracts Approved

*by William A. Monsen and Laura Norin with MRW & Associates, LLC in Oakland, California*

Policy concerns beyond the traditional focus on project need and project economics appear to have had strong influence on recent procurement decisions by the California Public Utilities Commission.

In 2012 and early 2013, the CPUC approved several projects that were not the “least-cost” options. In at least one instance, the CPUC approved a project even though a need for the project’s capacity had not been established.

These procurement decisions are noteworthy in light of the normal process in California for evaluating utility contracts to buy electricity from independent generators and utility plans to purchase or develop power plants.

The process begins with an assessment of each utility’s need for capacity, which may also specify a need for capacity of a particular variety, such as renewable capacity or local capacity in specific areas. It is followed by a solicitation for capacity to meet the identified need. Bids submitted in the solicitation are evaluated on a “least-cost best-fit” basis, meaning that the winning bids are those that provide the highest value to ratepayers when considering both the costs and the value of the energy and capacity being offered in light of the utility’s needs. Bilateral contracts entered into outside of a solicitation are also evaluated on a least-cost best-fit basis by comparing these offers to bids from the most nearly contemporaneous competitive solicitation.

However, in a number of cases over the last year, the CPUC found that policy concerns overrode these basic tenets of procurement.

*/ continued page 44*

## IN OTHER NEWS

States. The guarantees can trigger a deemed repatriation of earnings or subject income a foreign subsidiary earns from providing offshore services to current US tax as if the services had been performed from the United States . . . . The Congressional Budget Office told a House Science subcommittee in March that 74% of the estimated \$16.4 billion that will be spent on energy-related tax incentives in fiscal year 2013 will go to energy efficiency and renewable energy as compared to nuclear energy, oil and gas. However, incentives for oil and gas production are permanent and have been in the US tax code since 1916, while most incentives for renewable energy have either already expired or are scheduled to do so in the next few years . . . . The IRS ruled that a partnership was created between a US company and a foreign affiliate, even though customers dealing with the “partnership” thought they were dealing with the US company. The foreign affiliate took an X% interest in profits from the US company’s branches in a region in exchange for a cash investment equal to the same X% of the branches’ market value. No separate legal entity was created. All property remained held in the name of the US company. The ruling is Private Letter Ruling 201305006. The IRS made it public in February.

*— contributed by Keith Martin in Washington*



## California PPAs

*continued from page 43*

In the first set of cases, the CPUC appears to have been guided in large part by economic development concerns unrelated to the energy sector. In the second set of cases, the CPUC was clearly guided by energy policy considerations, in particular the policy goal of encouraging the development of energy storage.

### Contracts That Promote Economic Development

The CPUC approved two controversial contracts in 2012 ostensibly for their economic development benefits: a contract to buy the Oakley gas-fired combined-cycle power plant and a long-term contract to buy electricity from the Bottle Rock geothermal project. Pacific Gas & Electric was the utility involved in both of these contracts.

PG&E first requested approval of the Oakley contract, one of the winning bids in PG&E's 2008 power solicitation, in September 2009. The proposed project was a 586-megawatt combined-cycle plant to be developed by Contra Costa Generating Station LLC and then sold to PG&E when the plant is completed in 2014. In July 2010, the CPUC rejected the contract, determining that the remaining winning bids in the 2008 solicitation better reflected the CPUC's environmental priorities and fully met PG&E's projected need. However, the CPUC allowed PG&E to resubmit the project if it could prove additional need, either due to failure or retirement of another project or a determination by the California grid operator that additional capacity will be needed to balance the growing amount of intermittent electricity being put on the grid from renewable generators.

PG&E appealed the decision and proposed delaying the on-line date of the Oakley gas-fired plant by two years to better match the utility's needs.

The CPUC denied PG&E's appeal on procedural grounds, but then took the procedurally questionable step of approving the deal by considering PG&E's appeal as a new application. Notably, the CPUC approved the deal even though it did not find that PG&E needed the capacity from Oakley. In fact, the one dissenting commissioner noted that PG&E not only did not have a need for Oakley, but also was expected to have a reserve margin of 69% in 2020 even without the Oakley plant.

The CPUC's decision approving Oakley raised the ire of many interest groups, who objected to the lack of opportunity for

public comment and other alleged procedural lapses. One, a consumer watchdog group named The Utility Reform Network or "TURN," took the case to a California appeals court. In March 2012, the court overturned the CPUC's decision, finding that the CPUC failed to follow its own rules when it approved the Oakley plant purchase.

PG&E responded to the court's decision by immediately filing yet another application seeking approval for essentially the same deal that the CPUC had approved previously. The timing of PG&E's application was critical. Three weeks later, the CPUC barred PG&E and the other California investor-owned utilities from submitting bids for self-build projects or accepting bids to purchase power plants in their competitive solicitations for electricity, unless there are special circumstances. (The decision is D.12-04-046.) The utilities are now allowed to purchase or develop utility-owned power plants only if there has already been a failed competitive solicitation for the capacity. This decision raised the stakes for PG&E for the Oakley project, since it might be the last opportunity to buy a power plant. Indeed, PG&E's application for Oakley was allowed for consideration only because it was filed before the decision.

The CPUC considered the Oakley deal for the third time from April through December 2012. The administrative law judge that oversaw these deliberations recommended rejecting the application because a need for this capacity had still not been proven and there was no evidence that Oakley would be the least-cost best-fit alternative for meeting PG&E's as-yet undetermined need. Yet, in December 2012, the CPUC approved the project for the second time. The reasons given included that the project was ready to start construction and would serve as a hedge against risks caused by regulatory lag, it would reduce pollution and help stabilize the grid, it would use less water than other conventional power plants, and it would probably help reduce electricity prices.

These reasons are notable for what they exclude. The CPUC did not say that PG&E needs the additional capacity or that the plant is the least-cost best-fit alternative. Without need, it is generally not in ratepayers' interest to develop a new plant, even a highly efficient, flexible plant. Without a least-cost best-fit determination, it is not clear which plant meets a specified need at the best value for ratepayers.

The CPUC skirted both these issues. Instead of a need determination, the CPUC relied loosely on statements made by the California grid operator in other contexts to indicate that there will probably be a need for additional capacity beginning in

2017 or 2018, even though the Oakley project would come on line in 2016. The decision acknowledged that the project may lead to near-term excess capacity but determined, without any support in the administrative record, that the risk of not approving another project in time to meet an as-yet unproven need required approval of the Oakley project. To address the least-cost best-fit requirement, the CPUC found, contrary to the administrative law judge's finding, that the project satisfied the requirement based on the four-year old solicitation rather than an up-to-date need assessment.

Discussion about the project at the business meeting of the CPUC at which the project was approved shed some light on the reasons for the project's approval. The CPUC president, Michael Peevey, acknowledged that PG&E had not proven a need for the additional generating capacity, but said that he supports the project because it is more efficient than PG&E's other fossil fuel plants and will, therefore, reduce greenhouse gas emissions. He said there were other policy benefits, including promoting renewable energy via good ramping capability and reducing reliance on plants that use once-through cooling.

However, what he stressed most were the project's potential economic development benefits: the project is fully permitted and ready to go and uses American technology that will create good union jobs in an economically-distressed area that needs jobs and has embraced the project.

Commissioner Timothy Simon also cited the policy benefits of the efficient, flexible plant and then emphasized the "tremendous benefit to the California economy" from the project, noting that Oakley will create 740 union jobs and \$4 million in purchases and that all elected officials who spoke at an all-party meeting supported the project. He said the project is in a part of California that was particularly hard hit by the economic downturn in 2008.

Of the three other commissioners, one voted to approve the Oakley deal, one voted against it, and a third, Commissioner Mike Florio, abstained, since he had been the senior attorney for TURN and had opposed the project when it was first proposed. The project was approved on a three-to-one vote.

The Oakley decision came just three months after the CPUC relied in large part on economic development benefits to justify approval of another controversial contract. This contract was an amendment to an existing power purchase agreement between PG&E and Bottle Rock Power LLC (Bottle Rock) for power from an existing 10-megawatt geothermal facility in Lake County, California. The approved PPA is the third amend-

ment to an existing PPA between the parties. Each of these amendments has reduced performance guarantees or increased the electricity price. The most recent amendment grew out of the inability of the project owner to raise the capital necessary to boost production at the facility, as required by the prior PPA. The amendment increased the PPA price by 56% for the first 10 years of electricity sales, waived significant damages that had accrued after the project owner failed to ramp up capacity, and extended the contract term in exchange for providing stronger guarantees that Bottle Rock would invest the capital needed to boost production at the facility and maintain a specified employment level. Bottle Rock had indicated that it would shut the plant were this PPA amendment not approved.

Shortly prior to filing for approval of the amended PPA, PG&E had run a solicitation for renewable power, and the shortlisted bids from that solicitation, including bids from four other geothermal projects, had much lower prices and higher value than the amended Bottle Rock PPA. Significantly, some of these bids, including two of the geothermal bids, were also for existing projects. PG&E justified the amended PPA with Bottle Rock based on undisclosed "non-price factors."

The CPUC said PG&E was wrong to try to justify the project based on non-price factors. Nevertheless, the CPUC approved the project on a three-to-two vote, with economic development benefits being a key factor in the decision. The CPUC did not provide any other compelling explanation for its decision.

At a later CPUC business meeting, Commissioner Timothy Simon commended Bottle Rock for staying in California, noted the letters received from Bottle Rock employees asking the CPUC to keep the project alive, and said, "In the difficult recovery that we're having . . . that ability to attract and retain capital, to provide the infrastructure that our state desperately needs in the energy sector and the jobs related to that, are primary factors, in my view, of our decision-making process."

Similarly, the CPUC president, Michael Peevey, said, "You have a situation of existing output there, existing people working, unemployment high in Lake County. These are good jobs. It's tough for me to turn my back on all that."

In summary, while the Bottle Rock proceeding was a contentious case, the CPUC determined that having an in-state project with a commitment to maintaining employment levels and investing further in the plant infrastructure provided enough economic development benefits to offset an apparently high cost of power from the project

*/ continued page 46*

## California PPAs

*continued from page 45*

compared to alternatives.

Commissioner Simon's vote was critical to getting both Oakley and Bottle Rock approved. He has since left the CPUC and been replaced by Commissioner Carla Peterman. While Peterman has not yet had an opportunity to vote on new controversial power projects and her future votes cannot be predicted, it is worth observing that she formerly served on the board of directors for TURN, the same consumer watchdog group that sued the CPUC for approving the Oakley project. TURN is also the former employer of Commissioner Mike Florio, the only Commissioner who did not vote for either project. The change in commission membership, along with apparently improving economic conditions in California, may reduce the importance of economic development as a reason for approving power projects. However, the precedent set by Oakley and Bottle Rock may still hold sway, especially given California Governor Jerry Brown's focus on job creation.

## Several power contracts have been approved recently in California that were not the least-cost options for utilities.

### Encouraging Electricity Storage

The CPUC has also recently set aside its least-cost best-fit framework to support energy storage.

Energy storage development is a goal of both the CPUC and Governor Brown, who included the development of energy storage in his clean energy jobs plan.

In December 2010, the CPUC opened a rulemaking to determine whether energy storage should be considered a "preferred resource" and the amount of energy storage, if any, that the commission should order each utility to have in place by 2015 and 2020.

The promotion of energy storage is not without controversy

because energy storage is expensive. At a January 14, 2013, workshop and in subsequent workshop comments, the California investor-owned utilities opposed storage procurement targets because of the burden on ratepayers. For example, San Diego Gas & Electric said in February 2013 comments, "Ratepayers should not be burdened with the cost of uneconomic energy storage systems installed simply to meet a mandated procurement target." The utilities and others, including the Independent Energy Producers Association of California, argue that many of the benefits of storage could be provided by other generation types and are urging that procurement be conducted on a technology-neutral basis.

However, CPUC President Michael Peevey is clearly headed in the direction of storage procurement targets or other means to treat storage as a preferred resource. He said:

"I believe the commission's energy storage policy is the bridge to our long-term future, not only 10 years from now, but 40 years from now and beyond. And we must start building that bridge or we will never reach our 2050 goals to reduce greenhouse gas emissions by 80% from 1990 levels. Our

responsibility to think further ahead for future generations weighs heavily on me, and that is why I am hopeful that energy storage will be a cornerstone to that future."

While the CPUC has not yet ruled on whether storage should be considered a preferred resource in its own right, it treated storage as a preferred resource in effect when approving solar contracts between

Southern California Edison and BrightSource Energy.

In November 2011, just weeks after releasing the shortlist from its 2011 renewable power solicitation, Edison requested approval of five amended and restated PPAs for solar thermal projects with BrightSource. Edison awarded the PPAs after a 2008 renewable power solicitation, but the contracts had been significantly revised since then, in part in response to a federal plan to preserve the desert where the projects were planned. The revisions included moving sites and adding molten salt storage to three of the proposed projects.

The CPUC rejected two of the proposed projects with molten salt storage on account of incompatibility with nearby

military training and questionable transmission availability. Of the remaining three projects, the CPUC found that the two without storage, Rio Mesa units 1 and 2, were highly uncompetitive compared with 18 of the 19 solar thermal projects that bid into a 2011 renewable power solicitation by Edison, and that the remaining project with storage, Sonoran West, was uncompetitive compared with the shortlisted contracts from the 2011 solicitation, though competitive compared to other contracts recently approved by the CPUC and to other solar thermal projects offered in the solicitation.

The CPUC said that, from a purely economic standpoint, none of the contracts should have been approved since they were all more expensive than other projects bid into Edison's 2011 renewable power solicitation. However, the CPUC wanted to approve Sonoran West to promote energy storage.

BrightSource said Sonoran West could not be built on its own and that a second-generation power tower, such as one of the Rio Mesa projects, would need to be financed before BrightSource could finance a third-generation project like Sonoran West. Therefore, the CPUC approved the Rio Mesa 2 project, even while acknowledging that its price was uncompetitive compared with other readily available options, in order to provide an opportunity for the first solar thermal project with storage to be built. The CPUC made it clear that approval of the Rio Mesa 2 and Sonoran West projects came as a package deal. It would have preferred to reject Rio Mesa 2, given the high cost. The two PPAs were approved unanimously.

In approving this package of uneconomic PPAs, Commissioner Florio, the former TURN senior attorney, made it clear that storage was the lynchpin to the deals:

"Getting to cost-effective storage technology really is critical for our future . . . While I normally don't support ratepayers taking technological risk, our whole push to a clean energy future is at risk. If we're going to get . . . to a truly clean and low-carbon energy future, we're going to have to take some risks like this."

While the CPUC has not yet decided whether to set storage targets for utilities, it has already established a storage procurement requirement for Southern California Edison. It required Edison in February 2013 (decision D.13-02-015) to procure at least 50 megawatts of storage to help meet Edison's 2021 local capacity requirement need of 1,400 megawatts in the west Los Angeles local reliability area. The decision explains that this requirement comes from the CPUC's interest in promoting "promising technologies with a / continued page 48

## Will Storage Remain a Preferred Resource?

The likely procurement carve-out for energy storage is a response to the need to integrate an increasing amount of intermittent renewable resources on to the California electricity grid. As California builds towards a 33%-by-2020 renewable portfolio standard and considers mandates for even higher levels of renewable generation in subsequent years, integration needs will continue to drive procurement decisions. However, storage is not the only option for meeting renewable integration needs. "Flexible capacity" from natural gas-fired power plants that can ramp up or down rapidly is another option that is also gaining favor.

The CPUC is considering beginning in 2014 to set specific procurement requirements for flexible capacity that can help to integrate intermittent renewable resources.

Preliminary proposals would require flexible resources to, at minimum, be able to ramp up and sustain energy output for a minimum of three hours. There may be other requirements. These requirements, along with mechanisms for determining and satisfying flexible capacity compliance obligations and implementation, contracting issues, and validation issues, are being addressed in a resource adequacy proceeding (R.11-10-023). A proposed decision on these matters is scheduled for late May 2013. Once these matters have been determined, then specific flexible capacity requirements are likely to appear in the utilities' solicitations for medium- and long-term power contracts, as well as their solicitations for short-term resource adequacy capacity.

As integration needs become better understood, the CPUC's policies regarding energy storage and flexible capacity are likely to be refined. There is already a push to better define "flexibility" and perhaps to define several types of flexibility to more closely match system needs in different time periods. Storage, some argue, is an expensive means of obtaining flexibility, since thermal power plants can provide these services more cheaply. As a result, it is not clear that energy storage will remain classified as a preferred resource over the longer term barring significant cost reductions.

## California PPAs

*continued from page 47*

strong potential to effectively meet [local capacity requirement] needs.” The CPUC said that it is not known at this time how many viable energy storage facilities will emerge by 2021 that will be able to be used for these purposes (none exists today) and described the 50-megawatt set aside as “an opportunity to assess the cost and performance of energy storage resources.”

Edison opposed this storage mandate. The Independent Energy Producers Association also opposed the mandate, suggesting instead that the CPUC should remove any barriers to bidding by energy storage owners in all-source solicitations. At a February 14, 2013 CPUC business meeting, Commissioner Florio said, “We don’t want paralysis by analysis with respect to energy storage. It’s time to move forward and get some real-world experience on whether storage can do the job economically and at a reasonable price.” The CPUC unanimously adopted the mandate, with the possibility for an exception only if the utility can show that the storage bids it received were unreasonable.

The CPUC went a step further and treated energy storage like a preferred resource in the Edison decision by including energy storage as a procurement option each time a preferred resource is required. In all, Edison is required to procure 50 megawatts of energy storage and 150 megawatts of preferred resources or energy storage. Edison is also authorized to procure up to 600 megawatts of additional capacity from preferred resources or energy storage. Unless the cost for storage drops significantly in next few years, storage is unlikely to contribute a large share of this “preferred-resource” capacity. Still, it is notable that the CPUC is treating energy storage on par with preferred resources such as wind and solar before deciding to classify it as such.

In light of the treatment of storage as equivalent to a preferred resource, the staunch support of the CPUC president for energy storage and the unanimous approval of all five commissioners for the relatively high-priced BrightSource contracts and for the 50-megawatt storage mandate for Edison, the direction of the CPUC seems clear: Barring a major policy shift at the CPUC or in the state legislature, the CPUC is likely to approve a preference for energy storage and an energy storage procurement target soon.

## Lessons

Developers would be wise to consider not just project economics, but also conformity with the commission’s policy goals when considering project development opportunities.

In 2012, projects with economic development value and projects with energy storage were given priority, even at the cost of overriding need and least-cost best-fit considerations.

The window for getting projects approved primarily on economic development grounds may be closing, but the CPUC is likely to continue to be sensitive to public support for a project and whether the project will create jobs in economically distressed areas. The CPUC’s priority for storage is likely to be formalized and specific procurement targets are likely to be established before an October 1, 2013 legislative deadline for a decision.

The lesson from these recent procurement decisions is not that economic development and energy storage should be added to project bids, but rather that the CPUC’s policy objectives have a strong role in driving decisionmaking and can override basic need assessments and cost comparisons.

Having an economically competitive project is not always sufficient. The BrightSource projects, for example, were selected in place of much more cost-effective bids that had been submitted to Edison in its 2011 solicitation. Therefore, to develop a winning bid, it is important to look beyond project economics and to consider also the CPUC’s ever-evolving priorities. A project with attributes consistent with the system needs as seen by the CPUC, including the need to support long-term policy goals, can be more competitive than a lower-cost bid. ☺

## The State of Project Financing in the Near East

*Financing projects in the Near East remains challenging. The commercial banks have largely disappeared. However, Saudi and other regional banks are active and are offering attractive terms. The Japan Bank for International Cooperation and the Korean export credit agencies have become increasingly aggressive in finding ways to support contractors and investors*



*from their regions outside the OECD consensus terms. Other development banks and export credit agencies are also eager to support development in the region. Saudi Arabia is a bright spot, especially for solar companies. Political risk coverage is available in some countries at rates that reflect varying degrees of perceived risk.*

*A group of panelists talked about these and other issues in the region at an emerging markets conference that Chadbourne hosted in Washington in January. The panelists are Hussein Ibish, a senior fellow at the American Task Force on Palestine, Daniel Wagner, CEO of country risk solutions, Jorge Jaramillo, principal counsel, at the International Finance Corporation, Terry Newendorp, president of Taylor DeJong, Nancy Rivera, managing director, structured finance, at the Overseas Private Investment Corporation, Aman Sachdeva, principal and CEO of Synergy Consulting, and Julie Martin, managing director at insurance brokerage Marsh & McLennan. Kenneth Hansen and Noam Ayali with Chadbourne in Washington asked questions.*

MR. IBISH: The Arab Spring is having a significant effect on projects in the region.

First, all assets possessed by the state are up for grabs. Everything that might have been considered relatively secure two years ago can no longer be considered stable or secure, so any kind of risk management assessment must take that into account, even when things look secure and predictable in the immediate term. Morocco is an example where, in the medium and long term, everything is up for grabs. Caution is highly advisable.

Second, so far, revolutions and regime changes have been restricted to republics such as Tunisia, Egypt, Libya, Syria and, to some extent, Yemen. The monarchies are relatively stable. The Gulf states are trying to manage the transitions through various forms of power projection, particularly influencing through money. They are united. This includes Qatar and Saudi Arabia, who have not agreed on much over the past 15 years or so. They agree that if revolutions must occur, they should be restricted to republics and must be prevented from happening in monarchies, including Jordan and Morocco. The big challenge is to prevent a revolution from happening in Jordan. The Gulf states also agree that, if there is to be a new order, it must be dominated by Islamists. They do not agree on what variety and no one is keen on any of them, frankly, but they prefer them to liberals. The big danger is Jordan, because the social contract in Jordan is in tatters. The Jordanian monarchy and

Jordan are more or less synonymous. It is hard to imagine Jordan continuing as it is without the monarchy, and the monarchy is not functioning as it ought to within the Jordanian social contract. Its core constituency is in very bad shape, so it is in grave danger.

The other monarchy that is brutal is Saudi Arabia, with its high unemployment and large population. It is possible that in the long run, or even the medium run, unrest could spread to monarchies.

Third, there is a gradual disintegration or fragmentation underway in the “mandate states” of Lebanon, Palestine, Syria and Iraq. The outcome for Syria is not clear, but it is clear that the old centralized Syrian republic from Damascus will not survive. Whatever happens will entail some form of state fragmentation. It means that Jordan is all that is left in the Levant, if you understand Israel, Gaza and the West Bank to be a fragmented form of the former mandate of Palestine. That calls attention to the future of Jordan and its survival as a centralized unified state if Iraq, Lebanon, Palestine and Syria have all failed. It means that anyone doing business in the Levantine states must think in terms of doing business with non-state or sub-state actors. The obvious example is the Kurdish region in Iraq. It is not a sovereign entity, but it behaves as if it were. A similar reality may emerge in Syria. It already exists in Lebanon to some extent and certainly when it comes to the Palestinians. It may emerge in other places as well.

Fourth, the notion is taking root in Washington that it is inevitable, irrelevant or desirable that Islamists come to power as a result of these uprisings in post-dictatorship Arab societies. It is not inevitable as seen in three contiguous North African states that have had post-dictatorship elections with three completely different outcomes for the Islamists. In Egypt, there was a solid victory for the Islamists that, while eroding, is still there. Islamists received a plurality in Tunisia and suffered an outright defeat in Libya. Their rise to power is not irrelevant because the Islamists across the board share a paranoid and chauvinist world view that is unfriendly to the West. Yes, the Muslim Brotherhood in Egypt are businessmen who understand the idea of contracts. However, in the medium run, a confrontation with the West over values and perceived interests is virtually inevitable.

Finally, all of this tumult means that there are tremendous opportunities as well as tremendous risks. It is almost a cliché now to point to Libya as a country that has foreign exchange. It is exporting increasing amounts of energy / *continued page 50*

## Near East

*continued from page 49*

and making increasing amounts of money.

The divisions that I am talking about tend to be sub-national. Only a few states like Morocco and Egypt have either a very long integrated history or are so small and so rich that they are immune from this.

### Investment Trends

MR. WAGNER: It does not pay to generalize about this part of the world. If you do, you will inevitably make mistakes.

It is worth comparing the flow of foreign direct investment to various countries in the region. You might be a bit surprised at some of the statistics. I looked at the UN conference on trade and development, foreign direct investment, inbound statistics comparing 2009 and 2011. Tunisia was down 35% over those two years, and Syria was down 27%. Compare this with Jordan, which was down 38%, but Jordan did not have any particular conflict during this period. Compare, for example, Egypt, which was down over 100% between those two years, with Qatar, which started out with \$8.1 billion in foreign direct investment in 2009 and ended up with negative \$900 million, since the outbound was more than the inbound. Oman was down 53%, Kuwait was down 64% and Saudi Arabia was down 50%. These countries did not have conflicts, and yet they all suffered the same malady. You could argue that this was in large part due to what was going on in the neighborhood.

Inbound foreign direct investment to developed countries was also significantly down during this period. Japan was down 86% between those two years. Australia, Canada, Germany and the United Kingdom all suffered. When we think about the relative risks involved in investing in any of these places, we have

to look at each project individually. We also have to look at each individual investment climate and make a determination. While all of those countries that I just listed had big problems, Israel was up 248% and Turkey was up 189%. Investors were making distinctions among acceptable projects, risks and countries.

Many of you will be familiar with the World Bank Group's "ease-of-doing-business" rankings. It was interesting to compare a few countries. Tunisia ranked 50. Luxembourg ranked 56. Luxembourg was rated as more risky than Tunisia in 2011. Egypt ranked 109, Russia 112, and the West Bank and Gaza 135. Not great, but Brazil and India are ranked 130 and 132, respectively. Does that stop people from investing in Brazil and India? No.

Expropriation has been on the increase, more generally, since 1988. Particularly in the primary resources sector, it has been going up like a rocket. In the natural resource sector, where governments have perceived that their own interests are very much served by expropriating assets, they have not hesitated to do so, and yet, ironically, the natural resource sector is where many of the investments have gone.

MR. HANSEN: Jorge Jamarillo, you have just heard that the Middle East has not been a great place lately for inbound investment. You moved from the International Finance Corporation headquarters in Washington to Cairo. Why?

MR. JARAMILLO: I started with IFC in 2000 and moved to Cairo in 2004, a year after the US-led invasion of Iraq. At that time, there was a lot of interest in reform and democracy in the region. I joined the Cairo office with a group of "rainmakers" on the business side and other officers who had a mandate to expand an existing advisory services facility into something called "Private Enterprise Partnership MENA." The IFC office in Cairo in 2004 was pretty much like a representative office of an international bank with about 15 or 20 people. They were not processing transactions. It was more focused on helping visitors

on mission and arranging meetings and logistical support for them. The office turned into a 120-person office, and our investment commitments increased from \$206 million in 2004 to \$1.5 billion in 2008. Last year, we reached \$2.2 billion in investments during that year in the Middle East. Similarly our expenditures on advisory services moved from less than

### Financing projects in the Near East remains challenging.

\$5 million in 2006 to more than \$20 million annually last year.

I lived in Egypt for eight years from 2004 to 2012. I moved back to Washington in September, so I have a first-hand account of what happened there during the Arab Spring.

Egypt has the largest Arab population in the world. In 2004, Egypt had a new, reforming cabinet. Some of the ministers in the cabinet, like the minister of finance or the minister of investments, were enlightened, brilliant people, and they opened up the economy. There was also freedom of expression, and people had access to all kinds of information. In a way, the cabinet was a victim of its own success. When the Arab Spring started in Egypt, people were asking for changes like terminating the emergency laws and stopping police force abuses, but the thing gained momentum and then combined with demands for dignity and social justice for the Egyptian people. They did not want to feel, as put by the military, like cattle being passed from the hands of the father to the hands of his son.

On January 28, 2011, I was in Cairo. On that day and the following day, the telephone lines, both fixed and mobile, were cut, internet access was cut, and the gates of some prisons were opened. Thousands of criminals were released while the police force was sent home. I saw how civil society managed to organize itself peacefully. Now, as it happens in any revolution, people are fighting to figure out their new identities. There is uncertainty and, therefore, the investment climate is not very conducive for new investments. I remember a Republican US Senator went there to witness the presidential elections and commented that it took 10 years for the United States to find its way after the American Revolution.

IFC has tried since the Arab Spring to help in maintaining investors' confidence in the country and, to that end, we made big investments. For example, we were part of a syndicate that mobilized more than \$2 billion to refinance a fertilizer group. A few months later, we did another big transaction of \$100 million with a construction company that was a revolving credit line for working capital. Nevertheless, at the moment, most of IFC's work out of Cairo is by advisory services, but we hope that investments from places other than the Gulf will resume.

## Country Survey

MR. NEWENDORP: We had two clients in Egypt whose deals in the oil and gas sector fell through in 2012. Project finance takes a long time, but we cannot really wait around indefinitely for improvement in the investment climate.

Sticking with oil and gas, there has been a reasonable amount of activity in Tunisia with new leases and exploration. In Libya, the Italians have been in the trenches, but are having a great deal of difficulty getting their deals put together. In Jordan, we had two significant deals die quickly in the second half of 2012. There is an enormous amount of concern among investors in the Gulf states about the monarchy in Jordan. It is too bad because Jordan has been a beacon of stability for some time.

Bahrain is a big problem. Bahrain had two deals that it would have liked to launch in 2013. One was the expansion of the Bapco refinery, and the other is expansion of the Alba aluminum smelter. There is major difficulty in attracting even regional bank debt, let alone the European banks. The European banks are not active in Bahrain right now. Two of them have maintained offices with skeleton crews primarily to provide investment advisory services.

On the flip side, a tremendous amount of liquidity exists in local Saudi banks where things have been extremely busy. There is an enormous appetite for projects in Saudi Arabia, particularly among the Koreans and Japanese. JBIC multiplied its financing commitment for Saudi Arabia. It is trying to facilitate greater Japanese penetration into some of the Saudi power and petrochemical projects.

Both the United Arab Emirates and Qatar are solid. The banks are liquid and are supporting transactions both in their own markets and in the region. One of the major beneficiaries of what has gone wrong in Egypt is Morocco. We see a huge amount of activity, including large oil and gas companies who would have shunned Morocco in the past and are now pouring money into developing offshore concessions. A tremendous amount of interest exists for projects in Morocco and the Kurdistan Republic.

Three years ago, there was one international oil and gas company active in Kurdistan; today, there are more than 35 compared to five who are active in southern Iraq. That says a lot about where people are willing to invest.

Within the Middle East as a whole, project finance debt is available from banks in Saudi Arabia, the UAE and Qatar. The European banks have saved some capacity for their favorite clients and countries. By and large, the European banks want to re-enter the project finance market with large corporate lending to mid-size and smaller clients in the oil and gas space and even in the infrastructure space. Project finance lending in 2012 in the MENA region was largely a story / continued page 52

## Near East

*continued from page 51*

about export credit agencies. It was not a story about commercial banks.

MS. RIVERA: The Overseas Private Investment Corporation has a deep interest in the region as the US government's development bank.

Before the Arab Spring, we were committed to the region, particularly Iraq. With the growing priority in Afghanistan and Pakistan, that interest spread east. We have been trying to pull business to the region. Part of what the US government promised the region after the Arab Spring is for OPIC to be even more engaged than it had been in the past.

OPIC announced shortly after the Arab Spring that it would deploy more than \$1 billion as quickly as possible. However, the private sector hit the pause button. The commercial banks are missing in action. At this point, you need multilateral financing

funding of the small and medium-sized enterprises that are the other economic engine.

Done well, SME lending is a relatively safe investment. We lend to banks, non-governmental organizations and other players who have the ability to relend funds readily to make a difference. We are not afraid of lending medium and longer term, so people can do things that they would not be able to do with what would otherwise be only a six-month or one-year facility.

Going from west to east, we would love to do more in Morocco. Morocco has traditionally been dominated by European, not American, investment. However, there are some interesting opportunities there, in particular in the energy and power sectors.

We have experience with Algeria. It is not an easy country in which to do business. You can do a great deal with Sonelgas and Soneltract in the oil and gas sector, but after that it's pretty limited.

We are very keen on supporting Tunisia. We have a franchising facility in place in Tunisia where anybody who is operating or setting up an American franchise can borrow money through this medium-term facility.

We are not open in Libya.

Egypt is the other big country that we are emphasizing. We have put several hundred million dollars into the financial sector for SME lending. We are

very interested in supporting infrastructure investments in Egypt. We have spent a lot of time trying to figure out how to get money to, through, with or alongside the government, but it will take longer.

We understand the value of supporting Jordan, and we continue to do so. It is a country where we have a significant amount of exposure. The last time I checked it was probably more than \$700 million, which is a sizeable number for a portfolio that is about \$15 billion in total. We just closed a deal that will disburse in two weeks for the third or fourth independent power project in the country. It was the European Bank of Reconstruction and Development's first deal in the region. EBRD is now very active and keen to support this sector. If you are looking for money, it is a good place to start.

We have been supporting Iraq for some time. It is another

**Some export credit agencies are becoming more aggressive in finding ways to support contractors and investors from their regions.**

to double up and work overtime to fill the gap. The confluence of the Arab Spring and the lack of depth in the credit markets has made the job that much more difficult.

I want to go through the countries from west to east and give you a flavor of what OPIC has been doing. Bear in mind that, even under normal circumstances, project financing of investments in these countries is difficult. The difficulty is compounded by the fact that many key countries have only transition governments. It is hard to find decision makers in key government departments who can be expected to remain in place for a long time. It is a grim picture, but we have been successful with putting money into this market on an expedited basis. We have done it by focusing on the pieces that continue to function. That may not be infrastructure, which really is the engine of these economies, but it certainly is SME lending or

challenging country. There are interesting opportunities, especially in the north. We have been trying to support a broad range of projects in Iraq from hotels to power generation to upstream oil and gas.

The Gulf for all practical purposes is closed for OPIC, because it is relatively high income, and we shy away from those countries.

Although we are not active in Saudi Arabia, if I were not at OPIC, I would be going after Saudi Arabia like mad. They have a very ambitious agenda. Saudi Arabia has decided to restructure its power sector to have 20% of generation come from solar. The program has been somewhat delayed, but people are expecting that it will kick off in earnest as early as next year. The economics, if you are in that space, are phenomenal because you can have a significant amount of run-on business.

MR. SACHDEVA: Our firm has seen quite a bit of change over the last 15 years in the MENA region. Commercial banks are pretty much gone. I can remember discussions in 2005 when developers considered any conversation with the US Export-Import Bank or JBIC torture. They no longer have the luxury.

Requests for proposals from governments in the region used to remain open for a four-to-six-month time frame. You had to submit a firm price bid. The only adjustment that these bids allowed were for movements in live work, and nothing else. You had to negotiate your EPC contract and all the underlying agreements within that time frame. That meant there was no question of ever talking to the export credit agencies because all you could get within four to six months from them was a letter of interest.

JBIC changed that. JBIC has gone outside of the OECD consensus terms time and again. It has been quite aggressive. You are talking about tenors for projects in Saudi Arabia and Abu Dhabi of 20 to 25 years. No European banks will do that.

Three years ago, there was a lot of activity in Egypt. All of that has pretty much stopped. We were involved in a refinery in 2011, that was just a one-off deal where there was a gap of about \$100 million, and a regional company came through with the money. That refinery is now under construction. That is the only deal of which I am aware.

In Jordan, we are currently working with the Chinese on a large oil shale mine and independent power project. Four IPPs have closed in Jordan, all with direct foreign investment or export credit agency money. There is no commercial bank appetite for Jordan. The deal on which we are working currently is really large. It is with the Chinese, so the project will be Chinese owned, with a Chinese EPC contractor and Chinese financing.

We are involved in a very early stage deal in the West Bank. We have not worked out the financing, but I would expect again it to be with the export credits agencies or the Islamic Development Bank.

Bahrain has pretty much shut down. There was one wastewater deal that got done a few years ago before the Arab Spring. It is currently under construction.

Saudi Arabia continues to amaze. It has issued at least one tender every six months for large, \$2 to \$2.5 billion deals, but Saudi banks come through with 25-year tenors and pricing at 125 basis points above LIBOR. The tariffs in that region are all 2¢ to 2.5¢ a kilowatt hour, including fuel. We work for the sponsors, and the returns are really tight. Buildings have been done because of the local banks. In a \$2 billion financing, you will find local banks taking up to \$1.7 to \$1.8 billion, leaving a small tranche to be financed by foreign lenders.

We have not seen the regional banks much in the United Arab Emirates. The UAE banks took a hit after the dip in Dubai, so you do not get more than 10- or 12-year tenors from them.

Kuwait has been talking about privatization for 10 to 12 years. It finally completed its first deal in the last few weeks, so I expect a lot of interest from all the top power companies. I expect Kuwait to generate continued interest.

### Pricing Political Risk

MS. MARTIN: I see it from a slightly different perspective. Marsh is a large insurance broker. I work in a political risk and structured credit practice. We place coverage for banks, but also for investors, and my particular practice is more focused on equity than debt.

The Arab Spring was a wake-up call for investors, not just companies located in the region, but also in other places around the world. They were surprised by the events and the rapidity with which they occurred. I remember visiting an oil and gas company in Houston with investments in Syria four or five years ago. It told me it did not need insurance for that because Syria was a very stable place and nothing was going to happen. The Arab Spring caused many companies to look at insurance, and we saw an increase in demand worldwide, but particularly in the MENA region for those investors who were still following through on investments that had already started.

We have not seen a lot of new investment, although there has been some. In the immediate aftermath of the Arab Spring, most of the private market underwriters were taking a “wait-and-see” position. We were working with / continued page 54



## Near East

*continued from page 53*

one client that wanted to expand an existing investment in Jordan. While it did not have coverage on the original investment, it decided to take coverage on the whole project including the expansion. When we went out to the market to obtain indications, we were turned down by the private market. We had interest from all of the official markets — the Multilateral Investment Guarantee Agency [part of the World Bank], OPIC and ISIC [affiliated with the Islamic Development Bank]. The coverage was ultimately placed with a public market entity. Having an official agency as a partner gave the insured company more comfort.

Since then, underwriters have reopened in some of the countries, but it really depends on the project and country. A good project in a not-so-great country probably could get political risk insurance protection. However, the options are limited. For places like Syria, there is no coverage. No one will insure a burning house. For places like Iraq, Libya and Egypt, it may be possible to find limited coverage for very special projects, short term in nature or mobile assets, but it will be very difficult to find coverage for longer term or bigger projects.

MS. RIVERA: OPIC is open in those countries. There are no issues whatsoever if you are American.

MS. MARTIN: There are still some underwriting concerns in some of those countries.

For the first time, we are seeing investors in Saudi Arabia asking for coverage. There are already some capacity issues for Saudi Arabia. We recently placed a multi-country program, and one of the countries in the program with a very large exposure was Saudi Arabia. We had some underwriters who could not participate at all because they had reached their maximum exposure capacity already in Saudi Arabia. It was a large program. We have 31 markets on it, so it was a very big syndicated risk where we tried to squeeze out all of the capacity that we could. I was surprised that some political risk insurance markets were already out of capacity for Saudi Arabia.

We are also seeing what I would call “contract frustration”-type approaches where people are selling projects to ministries or entities in Saudi Arabia for installment payments over a long term. Underwriters are not concerned so much about the payment risk because, obviously, it is a wealthy country, but they are concerned that contracts may be cancelled or changed by

political risk events in the future.

MR. HANSEN: Is the availability of public-sector financing enough to get some equity investors to commit to projects in the region? Can the agencies really make a difference?

MR. NEWENDORP: The answer is yes for Koreans who are now dominating power sector in Saudi Arabia. K-ExIm and K-Sure made a political decision to open the Saudi market to Koreans and to compete head to head with the Japanese, and it has succeeded beyond their wildest dreams. The Japanese are now struggling to catch up.

MS. RIVERA: It is absolutely the case. If we know that the equity needs an X% return, and we feel that it is an acceptable return — because we are not going to support projects that have incentives that are not proper, right? — we will try to find the right combination of government and private sector financing. If you are a strategic investor — not just a financial investor — who knows the business and what he is doing, then I think there is a deal to be had.

MR. SACHDEVA: JBIC really led that market in the Middle East. It has an interesting product called an “overseas investment look” or OIL. If there is Japanese equity, then it can get around the OECD consensus so it is not constrained by tenor and pricing. JBIC did a deal in Abu Dhabi about five or six years ago where it priced at 60% or 70% of commercial bank pricing. K-ExIm started doing that and offers a similar credit called OBS, where it tries to get around the OECD consensus. K-ExIm has played a very big role in that market supporting Korean contractors and has helped a large developer in getting a number of deals done. I helped structure a deal in Saudi Arabia where we got the Korean Trade Insurance Corporation or KEIC to give a \$400 million guarantee for a Chinese contract. It is an indication of the level of interest that export credit agencies, including US Ex-Im have demonstrated.

## Asset Values

MR. HANSEN: What can you say about asset values in the various countries? Have they been plummeting?

MR. NEWENDORP: Real estate in Dubai is a real bargain these days.

MR. SACHDEVA: There are bright spots, but I cannot say anything positive about it.

MR. HANSEN: So for the bottom-fishing crowd, it is probably a terrific opportunity.

MR. AYALI: One way to assess risk across the region is to get a

better sense as to how the political risk insurers are pricing insurance. I wonder if Julie Martin or Nancy Rivera has a sense what the premiums apply in the different countries for different asset classes on political risk insurance.

MS. MARTIN: That requires a complicated answer. It really depends on what the insurance covers and how it is structured, what the country is, how many markets you need to secure full coverage and other things like that.

For example, for this big program that we just built with 31 markets, the markets at the top are earning a lot less than the markets at the bottom who are closer to the risk, but I would say it is about 50 basis points times the coverage limit, but there were also indications for a single project in Iraq that priced at a rate above 300 basis points times the limit.

I just recently did an infrastructure project in Algeria with a good client, and it was around 135 basis points times the coverage limit. We have seen prices reach 500 basis points, but such high premiums are rare. It is rare to find somebody willing to pay that much and somebody willing to provide coverage even at that rate.

MS. RIVERA: At OPIC, we are open in all of those markets, and we still continue to price off a rate card, so if you go to the OPIC website, you will see for the different types of coverages what the range of pricing is for any given situation.

MR. WAGNER: In my experience, I've seen contract frustration rates go as high as 25% and be paid because, when you have a 300% mark up, 25% still represents a 275% profit. To give you some perspective, I was in Papua New Guinea two weeks ago and I learned that, in this place, which is perceived to be extremely risky, four-point coverage can be obtained for 100 to 120 basis points, which is just shocking to me, and if you take the breach of contract out of it, it can be under 100 basis points. The short answer is that where investors find insurers are interested, there will be competition to get into the game, and where insurers simply are not interested, it does not matter what the price is. The risk will not be insurable. ☺

## Tips For Construction Contractors to Avoid Costly Missteps

*by Aarta Alkarimi, in Dubai*

Experience dealing with contentious construction-related matters has taught that inconsistent modes of communication, incomplete documentation and major assumptions with respect to the chain of authority are commonplace in the construction sector. With the volume of work on major projects running in to the hundreds of millions or billions of dollars, common missteps have led to arduous document reviews, large claims and counterclaims that could have been mitigated in many cases.

Much like a building itself, the procedural foundations laid down at the onset of a project determine its future course.

Construction is the closest endeavor to the battlefield — they share similar concerns of terrain, weather conditions, materials, supplies, manpower, equipment, budgets, temporary accommodations, safety and time.

In the midst of such pressing considerations, procedures and paperwork tend to take a back seat to the sincere efforts of all parties to show results and “get it built.” Other than the initial interest in the agreements leading to a contract, upper management passes much of what is to follow in terms of procedure to functionaries at the lower end of the organization chart.

Competitive pricing often leaves little money for a document management team, thereby relegating an important function to a team that is under-manned and often left on the periphery of the project team. The filling out of forms and adherence to communication protocols are often seen as distractions by the “bricks and mortar” field engineers who are under the gun to show daily progress.

However, the time pressures imposed by the project schedule and the motivations of the individual team members (the owner, the architect, the engineer and the contractor) to show tangible progress are of little relevance to the auditor or claims analyst when justifications for certain actions — often performed many months or years back — are required. At such a juncture, adherence to procedures and the presence of documentation (or lack thereof) become all important.

With globalization, the construction / continued page 56

## Construction Contracts

*continued from page 55*

sector faces the additional challenge of different methodologies, practices and expectations being brought to the project by its various players. For example, it is now not unusual for a major project in developing countries to have working on it American architects, Australian structural engineers, British mechanical engineers, Canadian and Chinese suppliers, German equipment manufacturers and a South Korean general contractor. With this come the natural differences in approach, priorities, interpretation, prior experiences and the understanding of responsibilities.

In such increasingly common situations, the parties are assumed to be in agreement on many seemingly obvious principles due to a misinformed belief that everyone understands the essentials in the same way.

Anyone working on such a project would be well advised to adopt some simple procedures.

### E-Mails

The proper filing of contract documents, permits, drawings, specifications, reports and letters (all meticulously filed in binders and filing cabinets using a structured file numbering system of some sort) is obvious even to the uninitiated. The absence of such a system would be a glaring and utterly careless omission by all accounts. However, e-mails often seem to be viewed in a different light even though they transmit much the same information as hard-copy correspondence and increasingly form the bulk of day-to-day communications between parties.

Unconsciously, e-mails are often treated more like verbal communication than the written form even though they are most obviously the latter. The abundance of e-mails on any particular matter (given that they are quickly composed and are prone to more immediate responses) could form a 'transcript' with a wealth of contextual information not often seen in more traditional hard-copy letters. For this reason, among many others, e-mails should be viewed with much greater importance than they are given and consequently retained and filed with the same care given to paper-based communications.

In the construction sector, where the building site is the primary workplace and the conventional office environment is replaced with a temporary field office, the phased and limited duration of the construction schedule also means that many team members are mobilized and demobilized as needed and

few are present from project inception through close out. As such, the lack of discipline in terms of electronic data retention and filing could mean that vital information can be lost easily.

The following are some common practices that undermine the proper retention of e-mail data. E-mails are not copied to a project specific inbox only accessible by an administrator. They are routinely deleted from individuals' inboxes at their discretion when they are deemed to be no longer required. Individuals demobilized from projects at the end of their particular assignments move on and so does access to their e-mails. Old e-mails are routinely archived on the individual's computer hard drive to make space on memory restricted e-mail inboxes and the loss or damage of hardware can result in the loss of the archived e-mails. Document numbering routinely used for hard-copy letters, transmittals, etc. are virtually unused in e-mail correspondence making searches for information tedious.

These sloppy practices make later legal discovery into torture. Discovery is often hampered and prolonged by the two parallel sets of documentation seen at many construction projects: the formally filed hard copies and the disparate and scattered e-mails.

To harness the convenience of e-mail systems while still maintaining the controls to preserve information properly, certain steps must be put in place. Set up a project-dedicated company inbox with administrative access to which each employee must copy all business e-mails. Use standardized or coded subject headings to ease searches of all related e-mails and train employees in their use.

Locate and back up the e-mail server at an off-site location. Alternatively, use a dedicated data management system (project management software) to transmit all project related electronic communications between different entities. This requires the agreement of all parties to use a common platform for electronic communications.

### Owner Instructions

Major problems continue to arise on job sites when the contractor feels obliged to take directions from both the owner's project manager and the owner itself. If all parties are not in one room while instructions are issued, conflicting instructions can lead to schedule delays and extra costs. The contractor should study the existing contractual relationships and fully familiarize himself with the role of various entities on the job site and make it clear that all instructions must be issued through one source — the authorized management team.

Often, the owner will delegate to the project manager the power to issue instructions on its behalf, but at the same time bar the project manager from issuing instructions that are considered to affect time or cost. The ability to distinguish between the two forms of instructions is often in the eye of the beholder, but the burden to make the distinction clear often lies with the contractor. As such, the contractor must always respond to instructions where an explicit acknowledgement of a change is not present but possibly merited with a clear path of action (for example, the contractor notes that he is proceeding with the work while determining its cost and time impact or will only proceed with the work after determining so).

During construction, which can often last years, there will be instances when the project manager or the owner will issue an instruction on site (such as a work stoppage or an on-site change to the work) but, for various reasons, it may not be possible to receive the instruction in writing in a timely manner, if at all. In such circumstances, the contractor should respond in writing to the party that issued the verbal instruction as soon as possible to confirm the nature of the instruction, identify the instructing party, the date and time, and provide proper substantiation. The contractor should also note its right to claim for time and cost, if it is applicable.

## Baseline Schedule

The baseline schedule reflects thousands of activities that need to be updated on a regular basis and a new version saved each time an activity is added, deleted or changed from the scope. This is a fundamental task in administering the schedule. However, when it is time to measure delays, disruptions or acceleration, claim analysts often encounter gaps in the project schedule, making it very difficult to reconstruct accurately a full picture of what was supposed to take place versus what actually happened.

Also, schedules with complex interconnected activities often lose data or have it remain inadvertently hidden from parties who need to access it. In order to prevent loss of data, it is critical that the project team be careful not only to use the correct software version of the scheduling program, but also to ensure that the schedule data fully transmits from one user to another. We have seen several occasions where a project schedule has been transmitted to a claims consultant's standalone personal computer, but due to various reasons the transmission of information has been partial without any of the parties realizing it. Situations like this can not only undermine the credibility and

competency of the project team, but can also consume unnecessary time and money.

An example of the complex inter-relationships of a construction project schedule being thrown off by a seemingly simple issue is a recent instance in the United Arab Emirates where a schedule containing both regular 10-hour work days and six-hour statutory summer-month hot-weather work days was transmitted to an international delay consultant and imported into an eight-hour day database. The result of the import process was the lengthening of certain durations and the shortening of others and plenty of confusion. To avoid such problems, the party creating the schedule must ensure that all related information and assumptions are clearly transmitted along with any schedule for proper interpolation by others.

Similarly, where sections of the project schedule are password protected or encrypted, a log of how to identify the information should be closely kept so the data can be accessed beyond the construction period by appropriate parties.

## Attention to Notice Provisions

Timely written notices are required under construction contracts to preserve certain rights of the parties.

In fact, it is common for parties to agree that certain rights are lost unless a written notice is issued within a certain period of time stipulated by the contract. While in some jurisdictions, a late notice does not extinguish a contractor's right to pursue and recover a claim based on its merit as long as it is filed within the statutory limitation requirements, other jurisdictions are strict about the language of the contract and what the contract language indicates the parties agreed to in order to recover potential damages.

The contract manager should identify all notice provisions at the start of the project, pay close attention to the triggering events and make a log of when a notice should be issued in writing.

## Change Orders

The contractor and the owner should also agree and settle on a format and substantiation requirements for change or variation orders at the start of the project.

The construction contract probably addresses the procedure for issuing change orders, but contract clauses often do not get into enough detail about the extent to which the owner expects a change order to be substantiated, the number of signatories required and who the owner's authorized / continued page 58

## Construction Contracts

*continued from page 57*

signatories are. In instances where the contract's change order clause requires the contractor to carry out the owner's instructions by executing the works and getting paid at a later date, both the owner and the contractor must have settled on the extent and the itemized details with which the contractor should substantiate its price and schedule requirements for the additional works.

### Government Approvals

In most conventional construction contracts, the contractor is responsible for securing the various government approvals to proceed with work, for utilities to be connected and the project to be issued certificates of occupancy and completion. While the principles are essentially the same in most jurisdictions, we have seen many instances where international contractors operating in new jurisdictions incorrectly assume that the procedures they are used to in their home territories still apply.

With a poor appreciation of local bureaucracies, contractors commit to schedules with insufficient durations for required approvals.

As we have seen in many instances, significant and unrecoverable delays resulting from over-ambitious planning have severely undermined an otherwise well-executed project and caused contractors to have liquidated damages applied for delays. While the task of securing approvals and permits can be subcontracted to experienced local entities, the main contractor must build schedules with as much real world data relating to actual authorities' approval durations, closely monitor the process and weigh the potential impact of any delays on the project schedule as soon as possible.

Regular communication with the authorities is also essential to remain updated on regulations and codes as we often see new rules imposed with little notice and no allowances grandfathering projects that are already under construction.

### Dealing with Problems

The manner in which a company addresses a potentially-contentious matter depends not only on its business strategy and company culture, but also on the larger culture of the region in which it is operating.

In some regions, considerations such as family relationships and deference to certain notable or respected individuals often take precedence over some provisions stipulated in the

contract. In all but the most contentious cases, the contractor should always be mindful of relationship preservation, particularly when it is with a foreign entity.

At the risk of over generalizing, we have observed that contracting companies from the Far East are often cautious about addressing claims as they arise to avoid the perception of being overly claims oriented. They tend to document issues and present them by way of a formal dispute resolution at the end. On the other hand, European contractors file notices of claims as they arise so as to avoid the perception that claims are conjured up near the end to meet missed revenue targets.

While this is a sensitive issue and a matter of company strategy, if the contractor decides to defer a claim, close attention must be paid to the claim-related deadlines, notice provisions and documentation of the claim as it arises and not at a later date.

While progress photos are customarily included in a contractor's monthly reports to the owner, the establishment of a disciplined routine for taking detailed photographs on a daily or weekly basis produces a useful photographic history of the project that can be used to settle disputes among various parties (among subcontractors, among the contractor and one of his subcontractors, the owner and the contractor, and so on). Well-taken photos that are date and time stamped can help settle delay disputes by showing which party may have been delayed or inhibiting the progress of others, determine the actual date when a task was started or completed, settle damage claims, or identify violations or the cause in cases of accidents and injuries.

As with all other project data, digital photographs should routinely be downloaded on to the main computer server, properly cataloged for ease of reference in the future and regularly backed up.

Retaining international counsel that operates with little or no knowledge of local law, even if the contract is governed by the laws of the jurisdiction where the international counsel is licensed, is not the best approach.

In some jurisdictions where projects have been financed through foreign investment, local law risks are mostly mitigated by the presence of bilateral investment treaties, coupled with a governing law clause that selects a foreign jurisdiction's laws. Nevertheless, there are always local law issues that apply to a project, and the risk of mistakes can be mitigated by getting input from a local lawyer. The international and local counsels are not interchangeable but dual necessities. ☉



# Environmental Update

Two state-level climate change cap-and-trade programs in the United States appear to be finding solid footing.

On the west coast, a cap-and-trade program in California is off to a slow, but solid start. On the east coast, there were more bidders than available carbon dioxide (CO<sub>2</sub>) allowances for the first time in the last seven auctions of such allowances in the Regional Greenhouse Gas Initiative, or RGGI, a joint effort among nine states in New England and the mid-Atlantic to limit greenhouse gas emissions.

The California cap-and-trade program kicked off the first auction of greenhouse gas allowances in November 2012 and held its second auction in February 2013. The program caps the amount of CO<sub>2</sub> and other greenhouse gases that are allowed to be released each year by certain covered entities. The program initially covers only the power and manufacturing sectors, but will expand to reach other emitters of greenhouse gases. Covered entities need to surrender one allowance for each ton of greenhouse gas emitted.

The first auction held in November 2012 saw all of the offered 2013 vintage year allowances sell at a settlement price of \$10.09 per ton, but only about 14% of the available 2015 vintage allowances were sold. All 12,924,822 of the 2013 vintage year allowances were sold in February's auction, this time at a settlement price of \$13.62 per ton along with just over 46% of 9,560,000 2016 vintage year allowances.

The California Air Resource Board, known as CARB, cancelled a scheduled reserve auction in March 2013 because no covered entity expressed interest by submitting a bid or bid guarantee. The reserve auction was to offer allowances for sale from a cost containment reserve — a group of allowances withheld by the state for later release if needed to prevent a price spike — something that the market signaled was not needed. CARB intends to offer these allowances for sale during the next reserve auction on June 27, 2013. CARB recently announced that a total of 14,522,048 2013 vintage year allowances and 9,560,000 2016 vintage year allowances will be offered at the upcoming May 16, 2013 auction.

Meanwhile, on the east coast, RGGI serves as a multi-state program to reduce CO<sub>2</sub> emissions from power plants in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

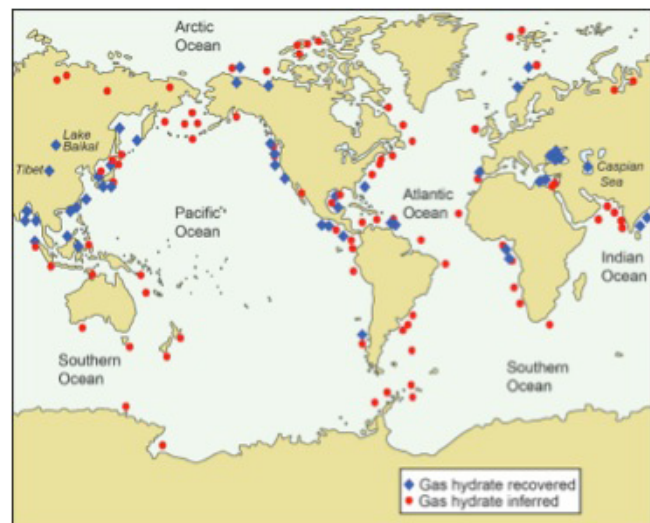
Under RGGI, the nine states use a regional cap-and-trade system to limit CO<sub>2</sub> emissions. Each ton of CO<sub>2</sub> emissions is worth one allowance. Regulated entities must submit an allowance for each ton of CO<sub>2</sub> emitted.

Results for the 19th auction of CO<sub>2</sub> allowances were announced in March. All of the offered 37,835,405 CO<sub>2</sub> allowances were sold at a clearing price of \$2.80 a ton. The auction was oversubscribed with a ratio of 2.2 bids to each allowance. This is the first time in the prior seven auctions for demand to exceed the supply and is probably a result of proposed changes to the rules for the program that were announced in February. Each state's trading is based on a model rule that was developed in 2008. The changes to the model rule announced in February include a reduction in the overall cap from 165 to 91 million tons of CO<sub>2</sub> in 2014, a 45% reduction. There were no proposed changes to the 2.5% year reduction in the cap from 2015 through 2020.

## Methane Hydrate

Japan announced what appears to be a significant step toward the next natural gas boom.

The Japanese Ministry of Economy, Trade and Industry announced the start of a trial extraction of gas from a methane hydrate deposit off of Japan's coast. Last April, researchers from the US Department of Energy, / continued page 60



## US Geological Survey

(available at <http://soundwaves.usgs.gov/2012/06/>)

## Environmental Update

*continued from page 59*

ConocoPhillips and Japan Oil Gas & Metals National Corporation demonstrated a field method to unlock natural gas from methane hydrate.

Methane hydrate exists in Alaska and offshore in continental shelf lands all over the world. According to the US Bureau of Ocean Energy Management, the mean in-place gas hydrate resource volume for the lower 48 states within the limits of the 200 nautical-mile US exclusive economic zone is 1,453 trillion cubic meters or 51,338 trillion cubic feet. However, this does not mean that this amount of methane hydrate is technically or even economically recoverable. Surveys of the methane hydrate resources associated with Alaska are underway. For comparison, in 2011 the US Energy Information Administration reported an estimated 862 trillion cubic feet of recoverable shale reserves in the United States.

Methane hydrate is a three-dimensional lattice ice structure loaded with trapped methane. Some call it fire ice since methane is the primary component of natural gas. According to the US Department of Energy, one cubic meter of methane hydrate can release 164 cubic meters of natural gas.

Methane hydrate exists all over the world as shown by the US Geological Survey map on the previous page, and, for some countries, could be a game changer. However, there is considerable concern about potential environmental impacts associated with the extraction process, including the release of methane to the atmosphere. Methane is a greenhouse gas and is estimated to be more than 20 times more powerful as CO<sub>2</sub> as a greenhouse gas.

## Wastewater Discharge Guidelines

Lenders and investors in power plants that make steam as an intermediate step to generate electricity should watch for release of wastewater effluent guidelines for the industry by the US Environmental Protection Agency in April. Some fear the new guidelines will require significant spending on retrofits. The guidelines will address mercury, zinc and selenium, among other pollutants.

The EPA is required to issue proposed rules by April 19, 2013 and to issue final rules by May 22, 2014 under a consent decree to which it and private litigants agreed in *Defenders of Wildlife v. EPA*, No. 10-cv-01915 (D.D.C.). It has been more than 30 years since these regulations were updated, a time period during which air emissions limits for many other pollutants have been ratcheted down. Instead of being released into the air, these pollutants can end up being discharged in wastewater effluent. Industry is concerned that new pollution limits may require significant new spending to retrofit existing power plants to comply with the new limits.

— contributed by Sue Cowell in Washington

### Project Finance NewsWire

is an information source only. Readers should not act upon information in this publication without consulting counsel. The material in this publication may be reproduced, in whole or in part, with acknowledgment of its source and copyright. For further information, complimentary copies or changes of address, please contact our editor, Keith Martin, in Washington (kmartin@chadbourne.com).

#### Chadbourne & Parke LLP

##### New York

30 Rockefeller Plaza  
New York, NY 10112  
+1 (212) 408-5100

##### Washington, DC

1200 New Hampshire Avenue, NW  
Washington, DC 20036  
+1 (202) 974-5600

##### Los Angeles

350 South Grand Avenue, 32nd Floor  
Los Angeles, CA 90071  
+1 (213) 892-1000

##### Mexico City

Chadbourne & Parke SC  
Paseo de Tamarindos, No. 400-B Piso 22  
Col. Bosques de las Lomas  
05120 México, D.F., México  
+52 (55) 3000-0600

##### São Paulo

Av. Pres. Juscelino Kubitschek, 1726  
16º andar  
São Paulo, SP 04543-000, Brazil  
+55 (11) 3372-0000

##### London

Chadbourne & Parke (London) LLP  
Regis House, 45 King William Street  
London EC4R 9AN, UK  
+44 (0)20 7337-8000

##### Moscow

Riverside Towers  
52/5 Kosmodamianskaya Nab.  
Moscow 115054 Russian Federation  
+7 (495) 974-2424  
Direct line from outside C.I.S.:  
(212) 408-1190

##### Warsaw

Chadbourne & Parke  
Radzikowski, Szubielska i Wspólnicy sp.k.  
ul. Emilii Plater 53  
00-113 Warsaw, Poland  
+48 (22) 520-5000

##### Kyiv

25B Sahaydachnoho Street  
Kyiv 04070, Ukraine  
+380 (44) 461-7575

##### Istanbul

Chadbourne & Parke  
Apa Giz Plaza  
34330 Levent, Istanbul, Turkey  
+90 (212) 386-1300

##### Dubai

Chadbourne & Parke LLC  
Boulevard Plaza Tower 1, Level 20  
PO Box 23927, Burj Khalifa District  
Dubai, United Arab Emirates  
+971 (4) 422-7088

##### Beijing

Beijing Representative Office  
Room 902, Tower A, Beijing Fortune Centre  
7 Dongsanhuan Zhonglu, Chaoyang District  
Beijing 100020, China  
+86 (10) 6530-8846

© 2013 Chadbourne & Parke LLP  
All rights reserved.

[www.chadbourne.com](http://www.chadbourne.com)

00-100 | 13-04 PF NewsWire April 2013